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Secretary-In-Charge,

JOURNAL OF THE INDIAN MEDICAL ASSOCIATION

67, Dharamtola St., Calcutta.

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Electro-Cardiogram as an Assistance to the Clinician

By

Lt. Col. A. C. MACGILCHRIST, M.A., M.D., D.Sc., M.R.C.P., I.M.S. (rtd.)
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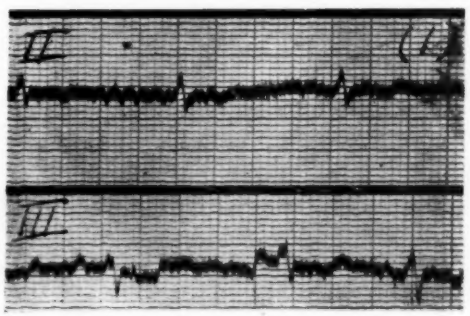
Hony. Demonstrator, Medical College, Calcutta,
and
MR. A. C. SINHA,
Electro-Cardiograph Dept., Medical College. Calcutta.

In this paper our intention is to show how great an auxiliary and help is to the clinician the timely and proper study of an Electro-cardiogram. It is shown by illustration of a few cases how the Electrocardiograph is of special value in determining the condition of the heart muscle, the relative preponderance of ventricular activity, the state of the conducting paths after their entry into the ventricles and the varieties of paroxysmal tachycardia and flutter. It is also of diagnostic value in congenital dextrocardia. Cases of tachycardia and bradycardia of no apparent clinical importance, when detected accidentally are worth investigation and this really shows the condition of the heart muscle which may be so often seriously deranged in disease.

1. Case No. 592. M.Oha, Hindu male, a cook (45 years old) by occupation, was admitted with murmurs both systolic and diastolic, provisional diagnosis was Mitral Stenosis. As a routine measure he was sent for Electrocardiographic study to the Department. The result of examination was Auricular Fibrillation demanding a urgent remedy with digitalis, strophanthus or quinidine. He showed extreme dyspnoea which began some ten or twelve days back, swelling of feet and orthopnoea.

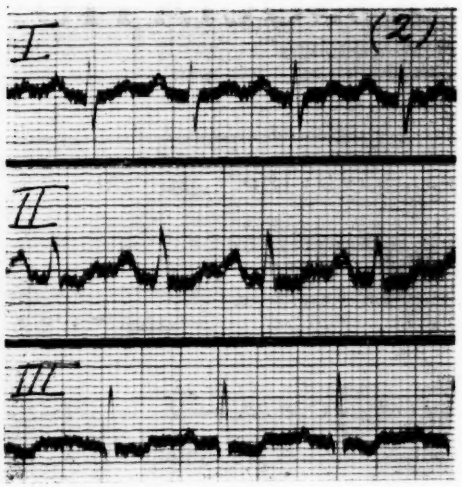
The report sent us about the case was that pulse was 96 per minute, soft and regular. Blood pressure was 130 systolic and 45 diastolic. We found the condition was bad. The reason for this might not be carelessness on the part of the clinician or his assistant but the prognosis



Case No. 1.

of cases of such duration could not be given at the time of sending the case. His myocardium was damaged. The orthopnoea was so prominent that we could not get a proper tracing by the first lead.

2. Case No. 590. S.M., Hindu female 18 years old was admitted for double murmur on the mitral area and diagnosed as Mitral Stenosis provisionally. She had palpitation, breathlessness and cough. Pulse was 90 per minute. Electrocardiographic study shows Simple Tachycardia



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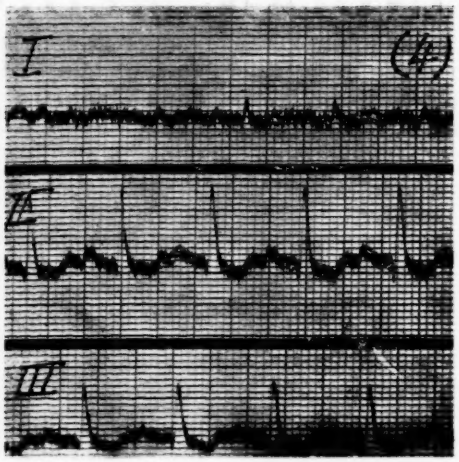

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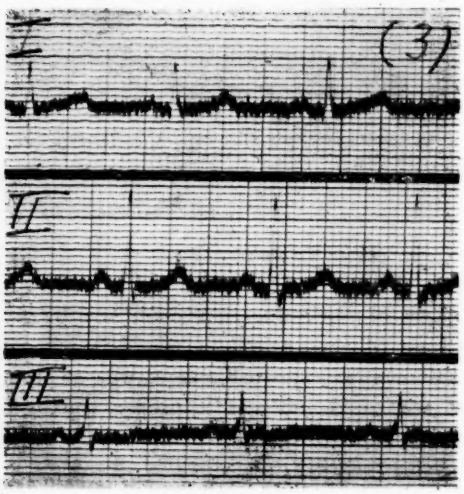

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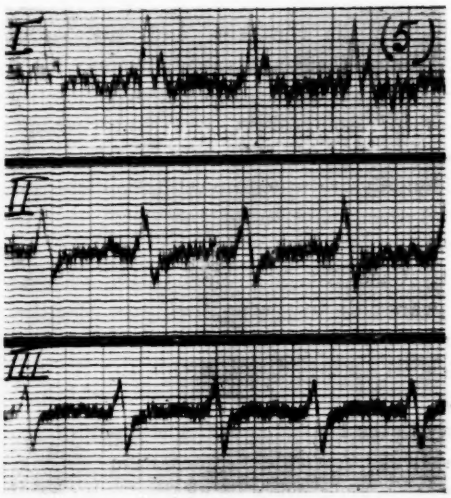

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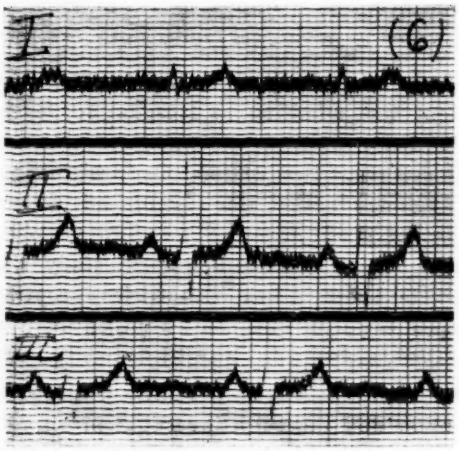

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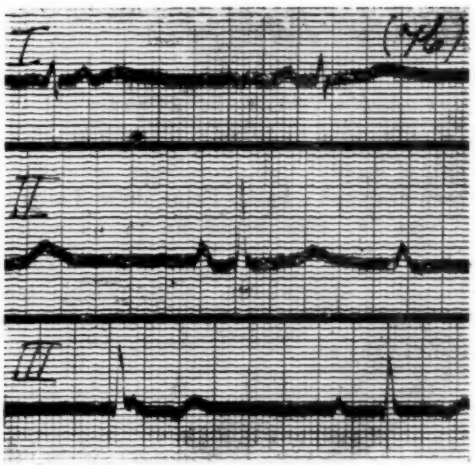

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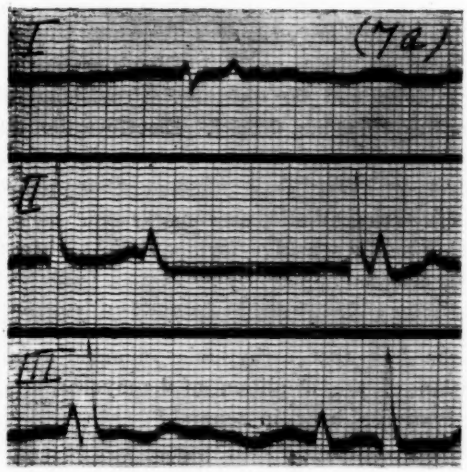

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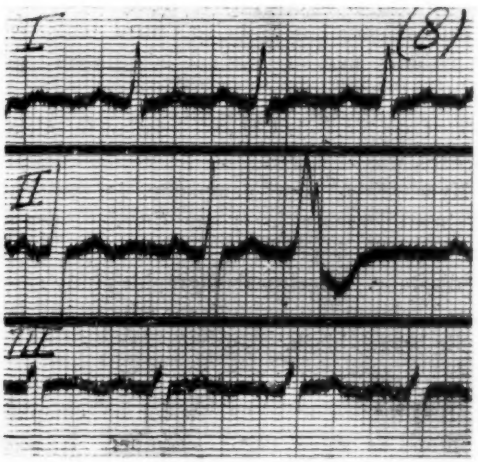

Case No. 8.

(Rate 123 per minute). It clearly showed that ventricles were not properly filled, thus agreeing fully with the diagnosis Mitral Stenosis. The important factor was the myocardium, it was adapted to carry the load and there was no sign of auricular fibrillation as in the last case. So a better prognosis could be given.

3. Case No. 588. C. F., 31 years old Anglo Indian lady was admitted for palpitation and swelling of legs off and on. These persisted for over one year and a half. Urine showed albumen. Pulse was 78. She came up to us with the provisional diagnosis of Myocarditis. Electrocardiographic study showed slight simple tachycardia (rate 90). Some Myocardial weakness was apparent in the case.

4. Case No. 580. B. L. D., Hindu Male, an accountant by profession, was admitted for dyspnoea on exertion. Past history of influenza one year back. Pulse was 120, volume, tension and rhythm showed no abnormality. Blood pressure was 130 systolic and 100 diastolic. Arterial wall was a little thickened. No provisional diagnosis was given. On Electrocardiographic study we found simple tachycardia (rate 130 per minute). The period of diastole is so short that the heart practically gets no rest and ventricles are not being filled sufficiently. Sympathetic nervous system is irritable. These conditions are due to some chronic toxaemia.

5. Case No. 571. I. H., a Christian female aged 49 years, was sent with the provisional diagnosis of Myocarditis. She complained of palpitation and breathlessness for some time. Pulse rate was 80. Blood pressure was 125 systolic and 100 diastolic. Electrocardiographic study showed Sinus Tachycardia, rate 125 per minute and Right bundle branch block.

6. Case No. 540, B. D. G., a Hindu male was admitted for precordial pain which he complained of, off and on since 1928 December. It became severe on 18. 12. 31. He had palpitation and breathlessness. Blood pressure was 110 systolic and 75 diastolic. Pulse was 78 per minute. Provisional diagnosis was Angina. Electrocardiographic study showed some Sinus Arrhythmia. There were marked somatic tremors. Conduction was sluggish in A. V. bundle, but still within physiological limits.

7*a* & 7*b*. Case No. 441, G. E., an Anglo Indian student was admitted in Hospital for fever and cold. Pulse was 44 per minute. Provisional diagnosis was Bradycardia. Curiously enough he was again admitted for continued fever for 4 days. Blood pressure was 110 systolic and 70 diastolic. Electrocardiographic study showed complete heart block, ventricles contracting independently at their own rate on both these occasions.

Clinically he ought to have received more attention and thorough investigation as regards the cause of the block.

On previous occasion we had a unique opportunity of studying a case which showed tertiary manifestation of Treponema infection. The condition of block practically subsided after treatment on specific lines.

8. Case No. 235. S. K. D., an electric mistry was admitted for palpitation which began insiduously. The case was from an epidemic dropsy area. Pulse was 80. Blood pressure was 125 systolic and 65 diastolic. Provisional diagnosis was epidemic dropsy. Electrocardiographic study showed marked Sinus Arrhythmia. Nervous control of heart was affected (not muscular defect). Sympathetic nervous system seemed to be abnormally sensitive (sympathetic rather than vagus affected apparently).

In concluding we want to put great stress on the fact that arrhythmias demand an investigation of the condition of the myocardium and innervation of heart in general.*

* Paper read at the Scientific Section of the VIII All-Indian Medical Conference held in Calcutta, March, 1932.

Some Observations on the Aetiology of Digestive Disturbances after Delivery (Popular name "Sutika")

By Dr. AMAL KUMAR ROY CHOWDHURY, M. D.,

Professor of Medicine, National Medical Institute, Medical Director, Calcutta Polyclinic Ltd., and Associate Professor of Medicine and Physician, Carmichael Medical College and Hospitals, Calcutta.

In the following article I wish to deal with only those forms of digestive disturbances associated with pregnancy for which no definite cause can be found. These disorders are very common here, specially amongst the middle class people. These generally begin a few weeks before or after delivery ; most of these cases begin a month after the delivery – the greatest interval in my series of cases was four months and the shortest interval two weeks. All varieties of cases ranging from mild attacks to the severe forms often ending fatally are met with. The percentage of occurrence is also very high ; if we take into account all varieties of cases the percentage is somewhere between 15 to 20%. Treatment of these cases by the recognised methods of the treatment of diarrhoea is unsatisfactory. Most of these cases are benefitted or cured by home remedies after a prolonged trial of the recognised remedies. On an analysis of these remedies it was found that these consisted of various digestives and diet rich in vitamines both water-soluble and fat-soluble. I began to collect statistics of these cases treated by the ordinary methods namely digestives, astringents, bowel-wash etc. and also of cases treated by these and vitamines and I soon found out that the latter method of treatment was best suited to cure the most intractable of cases and the percentage of recovery was also much higher in the latter series of cases. Obviously then the beneficial effects in the latter series of cases is due to the vitamines and I have been trying to ascertain what relationship the vitamines bear to digestive disturbances after delivery.

The cases can be conveniently classified under the following headings :—

A. Dry type ... With no diarrhoeal symptoms.
B. Wet type ... With diarrhoea.

Dry Type.

This again can be conveniently sub-divided into :

(1) *Simple Malnutrition* :—Gastric juice is normal in these cases. The stools are generally bulky. The appetite generally is normal. These persons generally waste and suffer from weakness and anæmia. I believe there is interference with the absorptive function of the small intestine,—the absorptive function of the large intestine mainly of water is normal and the peristalsis is also normal. The following is an illustration.

H. F. aged 19—Primipara delivery in July 1922. Since August 1922 she began to waste and within the course of a month she lost 13 lb. in weight. She had no diarrhœa. Her appetite was good—only the stools were bulky. There was no fever. Increasing weakness and anæmia led her to seek medical advice. She recovered under suitable diet regulation and digestives.

(2) *Flatulent Dyspepsia* :—In this group of cases there is generally an excessive formation of gas in the alimentary canal. The symptoms complained of are noisy eructations, rumbling noises in the abdomen, loss of appetite and very often a distaste for food. The stools generally are bulky and offensive, semi-solid and frothy. There is no diarrhœa. These patients also suffer from weakness and anæmia. The following is an illustration of this variety.

H. F. aged 33—mother of three children—last delivery in May 1923. Since July 1923 she had been suffering from noisy eructations 2 to 3 hours after a meal and gurgling in the abdomen. The stools were semi-solid, frothy and acid in reaction and of very offensive smell. The appetite was poor. She did not get any relief

from ordinary remedies until the diet was altered. Fat-soluble vitamines were added to dietary ; with these and digestives she is now doing well.

(3) Severe wasting with scybala formation and mucus with the stools. The patient loses flesh very rapidly. Colon is loaded and the stools are black in colour and coated with mucus. Appetite is sharp. In these cases there are indications of absorption of water and toxic irritation of the walls of the intestines leading to excess of mucus formation. Toxic absorption also occurs as this group of patients very often complain of rheumatic and neuralgic pains and headache generally early in the morning disappearing during the day and after exercise. Plate culture of the stools show, only growth of B. coli and enterococci. The virulence of the B. coli is altered as evidenced by increased local and general reactions in a guineapig and rabbit by the injection of cultures. Calcium content of blood is generally lowered.

H. F. 27 mother of three children—last delivery May 1930 : she was very robust. From August 1930 she began to suffer from scybala formation and toxic headache. In October 1930 she was so much reduced that an intestinal T. B. was suspected. She was bed ridden and the face and lower extremities became puffy. She was sent away for a change to Vindyachal and Dehri-on-Sone but returned without benefit. After her return she was put on a diet containing rice and ghee and butter, cream of milk followed by a digestive powder with calcium after the meals. She improved very rapidly and in the course of a month gained 14 lb in weight, within three months she was cured and the headache and also constipation totally gone. Some of these types of cases show a slightly palpable and tender liver and a spastic colon. A course of emetine injections and of coli-form vaccine is generally beneficial in these types.

(4) *Simulating Tuberculosis* :—Slight evening rise of temperature, emaciation, pain in the iliac fossae, tender liver and constipation with enlarged palpable lymphatic glands. The temperature generally rises to 100° to 100·5° in the evening, a slight chilly sensation may precede the rise. The glands round about the iliac vessels are very tender and felt as distinct swellings. Very often in these cases there are patches of deficiency of breath sounds in the lungs and a progressively developing anaemia. X'Ray examination is negative. Gastric analysis shows deficiency or even absence of hydrochloric acid. Anaemia but no proportionate loss of leucocytes is present. The percentage of polynuclears are slightly raised. These cases are very often fatal. P. M. appearances suggest chronic small follicular ulcers of the colon and intestines. Some observers *e. g.* Rose, have now been able to isolate Diplo streptococcus of a special type from allied cases and from the ulcers after death. He claims to have isolated the coccus also from blood in the living state. Good results are obtained by injections of anti-streptococcic serum polyvalent or of autogenous vaccines or Fasting's antibody solution. In this country examination for strepto is very often negative. In only one case I have been able to obtain a culture of streptococcus haemolyticus from the blood. The patient improved under autogenous vaccine. Following case is an illustration :—

H. F. aged 29—mother of 4 children. Last delivery in January 1930. She was a very healthy young woman and never knew a day's sickness. In March 1930, she developed slight constipation and a griping pain round about the umbilicus, appetite became poor and she complained of acidity after meals. From April she started getting a temperature 99·5° in the evening and occasionally the temperature was 100·5°. Headache was a very prominent symptom. Physical examination showed deficiency of breath sounds and prolongation of expiration in the right interscapular region. Liver was palpable and tender and there was pain in the right iliac fossa. A diagnosis of tuberculosis was made. X-Ray examination and sputum examination for T. B. negative. The patient was sent for a change to Bindhyachal

and Benares but came back after three months much worse. She was then put on a diet rich in vitamines B. C. D. and 20 c.c. of blood was taken from the veins and incubated on blood serum agar. After fifteen days there was a faint growth of streptococcus hæmolyticus. The organism showed an agglutination in a strength of 1 in 250 with the serum. Isolated organism was subcultured and an autogenous vaccine was prepared. This with stock B. coli vaccine was injected in graduated doses and the symptoms of the patient began to improve. The weight increased rapidly and within three months she was afebrile and was her former self. She is still living and quite healthy.

WET TYPE (WITH DIARRHŒA).

This type is common and this is the type for which early relief by treatment is sought for.

(1) *Non-inflammatory diarrhoea probably due to a disturbance in the nervous balance.* This is the type very often amenable to treatment by suggestion, wearing of charm, amulets etc. It is generally found in women of nervous temperament. Emotion, fright, worry all aggravate the condition. The sufferers are fairly well nourished, the appetite is good and the weakness is not much. The stools are not offensive. Following case is an illustration of this type :—

H. F. aged 22—mother of two children, last delivery about three years back. Since first child birth she was suffering from diarrhœa not controlled by any treatment. Emotion, anxiety used to aggravate the condition. She came of a nervous stock. Treatment with diet rich in vitamines and B. coli injections gave relief and she is now doing fairly well.

(2) *Inflammatory forms with intermittent attacks of diarrhoea.* These cases generally do well if they are kept on a rigid dietary but the slightest indiscretion in the diet, over-exertion, exposure to cold bring on the attack accompanied by colicky pains and tenderness all over the abdomen. The stools are watery, acid in reaction and contains leucocytes in plenty. The health goes down with these attacks and then with rigid dietary and digestive remedies the diarrhœa stops and the woman becomes apparently healthy.

(3) *Chronic afebrile diarrhoea* :—In this variety the diarrhœa is generally of a lienteric type. There are very often several loose motions within one or two hours of meal accompanied by colicky pain and tenderness in the abdomen and very often there is much mucus in the stools. The stools are not offensive. If the patient starves very often there is no diarrhœa. Following is an illustration of this variety :—

H. F. aged 25 mother of four children. Last child in June 1921. Since the last child birth she is suffering from diarrhoea. Very often she has to go without food for fear of bringing on an attack of diarrhoea. She has taken all sorts of medicine without any relief. She has been placed on a diet containing fat-soluble vitamines and fresh fruits and a digestive after meals. She is doing fairly well now.

(4) *Diarrhoea with slight evening rise of temperature.* The suface temperature is not high but the mouth temperature is 1° above normal in the evening. Some time this is marked 5 to 6 hours after the meals and in these cases there is a slight chilly feeling and a sensation of heaviness in the head with the rise of temperature. There is pain and tenderness in the abdomen. Following is an illustration of this variety :—

H. F. aged 24, mother of four children having diarrhoea since last child birth about a year back. Her mouth temperature in the morning and evening daily was 99·8°. This rise was accompanied by intense headache and a slight chilly feeling. The temperature and other symptoms subsided after a change of climate and diet. She is now doing fairly well.

(5) *Diarrhoea with high temperature* :—The temperature is generally 101° to 102° in the evening. There is a general abdominal tenderness. Protracted diarrhoea leads to anaemia, wasting and later a puffiness of the face, oedema of the extremities and also ascites. There is slight leucocytosis in the blood with a polynuclear increase. The stools are offensive mixed with

mucus. The blood examination frequently shows a progressive anaemia. Biochemical examination shows a diminution of calcium content of the blood, culture of blood is very often negative. In some only streptococci can be isolated. These cases are very often diagnosed as tubercular diarrhoea with fever and generally end in death. Illustration of the above is the following case :—

H. F., aged 33, coming from Faridpur, mother of three children, last child about two years back. Two months after the last child birth she had diarrhoea with fever and abdominal tenderness. The stools were offensive and sometimes streaked with blood. There was much mucus in the stool. Culture of the stools did not reveal anything abnormal. She gradually went down till anaemia, puffiness of face, oedema of the legs and ascites developed and she died one year and a half after the last child birth inspite of the best available medical treatment.

(6) *Diarrhoea with severe type of anasarca.* This is another of the fatal types. These cases generally have a blood picture resembling that of pernicious anaemia *e. g.* high colour index nucleated corpuscles in the blood and poikilocytosis ; ascites is not present in these series of cases. The gastric acidity is very much diminished and in some a condition of achlorhydria is present.

In others where ascites is a prominent feature, a severe disturbance of the metabolic activities of the body is present. This is evidenced by the loss of calcium from the blood, a disturbance of the normal albumin globulin ratio of the blood, an increase of cholesterine and fibrinogen content of the blood. Very frequently the liver is enlarged and painful. The oedema is very well marked, anaemia is also present and the heart is dilated. In the stools the filtrate shows the presence of a large quantity of albumin. Like nephrosis a toleration of thyroxin is a peculiar feature of these cases. P. M. the mucus membranes of the intestine show thinning and atrophy, in some places the walls are almost diaphanous. Some small superficial erosions are also seen in the small intestine and the colon. Histologically the glands and and villi show signs of atrophy round about the ulcers.

H. F. 19. Coming from Mymensingh, mother of one child. Since the child birth she developed diarrhoea not relieved by any treatment. She became anaemic and a peculiar lemon yellow tint of the body developed. Blood count revealed pernicious type of anaemia. Treatment with whole blood, serums, liver extract and astringents were of no avail. Her temperature varied from 97° to 99°. Two weeks before death temperature came down and did not rise more than 98·4°. Diarrhoea was also controlled but the pulse rate remained about 120. and the anasarca became more marked and she died inspite of every treatment. Some of these cases now respond well to raw liver treatment with a diet rich in vitamines B, C and D. Other group of cases do well with plenty of easily assimilable protein dietary in the shape of creams, peptones half-boiled eggs, meat extracts. Thyroid treatment is also indicated in some and very frequently good results are obtained by using Lugol's Iodine internally with thyroid and calcium in the form of tablets or by injection.

(7) *Dysenteric symptoms* :—These cases present all the symptoms of ordinary dysentery *e.g.* blood and mucus in the stools with intense griping. There are no amoebae or dysenteric bacilli in the stools. There is a moderate degree of fever and leucocytosis. These cases also very often end fatally. P. M. shows ulcers in the large bowel specially in caecum and sigmoid colon.

H. F., 26 mother of two children, last child 1½ years ago. She developed diarrhoea at first. This gradually turned into dysentery and was admitted into the Hospital for treatment. Stool examination and culture did not reveal anything special. She was given a bowel wash with silver nitrate solution. She rallied somewhat at first but the symptoms all on a sudden became aggravated. She became unconscious and died.

Morbid Anatomy :—The general post mortem findings are catarrhal inflammation of the lower end of the ileum and the whole of the large intestine. There is thickening of the mucus membrane. In the severe forms there

are generally hæmorrhages under the mucus membrane. In others the follicles show necrosis leaving superficial ulcers in the mucus membrane. The liver and the heart show fatty changes in some and the kidney tubules show signs of cloudy swelling. There is accumulation of fluid in the serous cavities. There is frequently seen a want of relationship between the P. M. findings and severity of the clinical symptoms. In others with severe metabolic disturbance there is a thinning of the mucous membrane of the intestines with an absence of inflammatory reaction so much so that the intestines look diphanous and the villi are atrophied. The liver shows fatty degeneration in some places. The P. M. findings prove that the disease is the result of an irritant and the slight variations in the lesions are generally due to the intensity of the irritant and to the period of time during which its action has persisted.

Nature of the Irritant:—The question naturally arises—are these disorders separate clinical entities or are they several manifestations of a disease having a special aetiology? A mild attack of diarrhœa if untreated generally becomes worse and anæmia, fever, dysenteric symptoms all develop and the case proves fatal, or in some cases a slight attack of diarrhœa in the first lactation period generally becomes worse after the delivery of the second child and the case gradually goes down hill. Considering the fact I am inclined to believe that these groups of cases are manifestations of a single clinical disorder brought about by an irritant the intensity of which varies in different cases and the irritant in the fatal group of cases leads to a serious disturbance of the normal metabolism as evidenced by hypercholestorolæmia, diminished calcium content of the blood, a disturbance in albumin globulin ratio and also an increase in the primitive protein-fibrinogen in the blood. In some cases a secondary infection very often occurs as a result of the devitalising action of the irritant on the body.

H. F. 26, mother of three children, developed diarrhœa after the first pregnancy 5 years back. The diarrhœa was of an intermittent nature. Health remained good after the second child birth. About three years back, she began to have diarrhœa with fever and abdominal tenderness. She became somewhat better after treatment and a third child was born a year back. All the symptoms recurred *e. g.* diarrhœa, pain, and tenderness round the umbilicus and fever. Later dysenteric symptoms developed and she became emaciated; anæmia, oedema of the legs and ascites supervened and she died a month before inspite of every treatment.

These cases generally show the presence of B. coli, staphylococci and streptococci in the stools. Even after careful plate culture no other bacteria are found. A special type of streptococci is generally found in severer types of cases and can also be isolated from the blood by special procedures. Injection of B. coli and streptococci cultured from the stools and blood of these patients into the peritoneal cavity of guineapigs and rabbits show that these cultures are much more irritant as compared with those cultured from normal stools. In some cases hæmorrhages under the mucous membrane of the lower part of the small intestines and under the M. M. of large intestine are seen with dysenteric symptoms in the rabbits. These facts prove that the bacteria which are normally found in the stools and harboured in the alimentary canal seem to have acquired a higher degree of virulence and sometimes a special type of streptococcal infection may be present. Another important fact noticed by me is that injection of B. coli vaccine or mixed coli-form vaccine in very small doses in patients suffering from these disorders cause very severe reaction whereas the same dosage injected in normal persons hardly causes any reaction. This shows that a hypersensitiveness exists in these cases to the organisms. It may be assumed then that these bacteria are one of the causes if not the sole cause of the intestinal lesions. The question may next be asked—what causes this increase in the virulence of the bacteria or a susceptibility to secondary infection specially with streptococci?

The treatment of these disorders was very

unsatisfactory but quite lately very good results are being obtained with a diet rich in vitamines in some cases water-soluble and in some fat-soluble and in some both and also with medicinal substances rich in vitamines *e. g.* vitamine D, radiostol, metagen etc. This and also the fact that the various remedies for these disorders generally consist in the administration of a diet rich in vitamines led me to believe that the vitamines might have something to do with the causation of these disorders. I have been able to produce a condition of diarrhoea in rabbits after delivery by administering a diet poor in vitamines and this condition rapidly cleared up on the addition of vitamines to the diet. It is also a well known fact amongst those who generally keep rabbits shut up in a cage that if these develop diarrhoea or alimentary disorders after delivery the best method of cure is to allow these rabbits to roam about and take whatever they like *e. g.* a good deal of vitamines. It is also a well known fact that diarrhoea and dysenteric symptoms are very often complicating features in rickets and scurvy both of which are now accepted as diseases due to deficiency of vitamines C and D. It is also seen that mothers suffering from these diseases generally bear children who suffer from rickets in their infancy. In the male sex a type of chronic diarrhoea is benefitted by treatment with vitamines and I believe that the successful treatment in many cases of chronic diarrhoea with raw fruits and milk is due to the vitamines in the raw fruits and milk As early as 1913 C. WEGELE reported successful treatment of chronic diarrhoea with milk, and raw strawberries, bananas, peaches, melons, cucumbers all rich in vitamines.

ROBERTSON in his book "On the chemical basis of growth and senescene" suggests that the vitamines may be used in the production of hormones by the body. He says of them : "Little doubt can be entertained that the necessary food stuffs actually enter into the manufacture of substances produced by tissues, whether these are structural agents of protoplasm or substances elaborated by them *e. g.* enzymes in the performance of their functions or substances elaborated by a relatively small mass of specialised tissue for the advantage of the whole organism *e. g.* hormones". Now we know that during pregnancy the metabolism of the body is increased and a good deal of disturbance in the hormonic balance of the body also takes place. The cholesterol of the blood is also raised. The growth of the child in the mother's womb may have also something to do with the vitamines of the mother's body as it is believed that the growth of the child is dependent on some hormones *e. g.* pituitary (anterior). The constant drain of vitamines from the system of pregnant woman by the growth of the child in utero and also during the lactation period causes an alteration in the hormonic equilibrium bringing about deficiency in the enzyme action of the various alimentary digestive juices and also an alteration in the nervous balance giving rise to increased peristaltic movement. When the deficiency is of long standing duration and not compensated by a suitable dietary a profound disturbance of metabolism occurs leading to albuminous drainage in the stools, alteration of the albumin globulin ratio of the blood, hypercholesterolaemia, anaemia and generalised anasarca. In these series of cases degenerative changes are found in the liver, kidneys and intestinal mucous membrane. Experimental proof of the fact that deficiency of vitamines may produce diarrhoea has been forthcoming from MACCARISON's observations on monkeys. These fed on diet poor in vitamines C. D. develop obstinate diarrhoea and sometimes dysenteric symptoms. My own observations in rabbits quoted above also lend support to the view.

Associated with a deficiency in the vitamines, the bacteria of the normal intestine acquire a special pathogenic power giving rise to the catarrhal changes. If the drain from the system still persists and the diet is not modified the catarrhal changes pass on to actual ulcerations or in some cases to gradual atrophy of the mucous membrane. Secondary infections then supervene as evidenced by the fever, headache, anaemia and leucocytosis in the severer types of cases.

The thyroid also seem to be affected in the severer types of cases and these types have generally a tolerance to thyroxin and suffer from massive form of oedema.

This disorder is specially seen amongst women of the middle classes—the rich taking a diet rich in vitamines and the poor taking sufficient quantity of vegetables which are rich in vitamines also.

The fact that these disorders do not develop immediately after the delivery also supports the view that vitamines might have something to do with these disturbances because in this country it is the general custom to give these women plenty of fat, milk, fruits, etc immediately after the delivery and the child is not put to the breast for a few days. It is only when the drain of lactation comes coupled with the withdrawal of the above dietary that the disease manifests itself. To summarise, it can be said that several groups of cases are included in the disease known as "Sutika". Not only the P. M. appearance but also the varied symptomatology and biochemical alteration of the blood support the above contention the simplest type of case being slight malabsorption and malassimilation and weakness and the severest types showing P. M. thinning and atrophy of the intestinal walls with massive oedema, anaemia, loss of appetite, blood and mucus in the stools, biochemical changes in the blood, albuminous drainage by the intestines and kidneys and a secondary streptococcal infection very often ending fatally. Between these two extreme types there are numerous intermediate types of cases with a varied symptomatology and necessarily a varied response to treatment.

TREATMENT.

In the simple varieties of cases treatment with digestives and a diet rich in vitamines *e.g.* fresh milk, fruit juices, green vegetable soups generally suffice to bring about a cure. In some cases water-soluble vitamines and in other fat-soluble ones are useful. In severer varieties of cases both fat and water-soluble vitamines are necessary and good results are obtained from the use of metagen capsules, metagen emulsions etc. codliver oil, butter fat &c. In the severe cases preparations of opium, bismuth and other astringents are required. In some cases over and above these methods of treatment, cannabis indica, pepper, cinnamon, cloves and other aromatics are very useful. A diet which I have found suitable in most of the cases consists of boiled rice and ghee also boiled, with salt to taste. In the severe types of cases pancreatic emulsion in heavy doses, plenty of assimilable peptones, half boiled eggs, meat extractive, sugars are also useful. Spirituous drinks *e. g.* Vibrona, Port, St. Raphæl's wine, Wincarnis, Muichkan, Vinomalt, Aswan etc., all are of use. These stimulate the appetite and help absorption by dilating the intestinal blood vessels. In anæmic cases liver treatment and occasional whole blood injections are of use. In severe types with anasarca a course of thyroid and calcium treatment may save some of these patients. Ultra violet applications after rubbing the abdomen with cod-liver oil is also of use. In febrile cases anti-streptococcus serum, coliform vaccines or antigenous vaccines may be tried with benefit. In the cases where the liver is palpable and enlarged a course of emetine injections may be prescribed with advantage. Small doses of Makaradhwaja with astringents or the indigenous remedy known as "Trifala" or three fruits is also suitable for some of these types.

Other diet *e. g.* curdled milk, fresh cream, cheese, cocoanut-water, the white of the cocoanut all may be used with advantage. Deficiency of vitamines might be one of the factors and it is still necessary to prove which variety of vitamines are concerned with the development of these disorders. Future work along these lines might throw some definite light on the aetiology of these disorders and suitable and timely treatment may prevent the development of rickets in children and rickets is one of the chief causes of high infantile mortality in this country.*

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*Paper read at the Scientific Section of the VIII All-Indian Medical Conference held in Calcutta, March, 1932.

Some Recent Advances in the Preparation and Standardisation of Therapeutic Sera in India

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About 12 years ago India was entirely dependent on foreign manufacturers for the supply of therapeutic sera. It was the experience of many of you throughout the period of blockade during the last war that many patients died of streptococcal infection, diphtheria and tetanus for want of supply of the specific sera. Up till then no Indian manufacturer undertook the preparation of these sera. It was the idea of the three well-known doctors of Calcutta *viz.* SIR NILRATAN SIRKAR, DR. B. C. ROY and DR. B. GANGULY to start a laboratory for the preparation of Biological products in this country. It was supposed by many at that time that therapeutic sera could not be prepared in the tropics. We can, however, declare to-day that all varieties of therapeutic sera can be prepared in this country which compare favourably both in price and quality with any imported product. The two concerns of Calcutta engaged in this line produce yearly rupees one lakh worth of sera, and I dare say that if the yield would be greater there is demand for ten times the present output.

Since I undertook immunological work about ten years ago there has always been difficulty no doubt in the preparation of serum. But gradually by improving and improvising techniques to overcome the difficulties of the climate we are now preparing Antistreptococcus serum, Diphtheria Antitoxic, Tetanus Antitoxic and Antidysentery sera of international standard.

Of the different sera, antistreptococcus serum has got the largest use in our everyday practice. Up till recently our standard was the quantity only as no uniform and definite standard could be established. The highest quantity of broth culture which could be injected into a horse for immunisation was between 150 to 200 c. c. Even with such a quantity almost every horse used to get very strong reaction and arthritis some-time or other during the course of immunisation and we have lost many horses from acute endocarditis, as revealed by postmortem examination. This quantity was quite inadequate to produce a very potent serum. By converting the toxin of streptococcus into toxoid by treating with formaldehyde we have been able to inject into horse up to 400 c. c. without any reaction in the injected horse. We have seen clinically that the antistreptococcus serum, thus, prepared is much more potent than what was obtained before the introduction of this modification. This is no doubt a definite improvement of the quality of antistreptococcus serum. We have also been successful in concentrating and purifying antistreptococcus serum according to a modified method of Banzhaf. This will remove the unpleasant experience of anaphylaxis and serum sickness so often observed after giving a large quantity of serum necessary to treat a patient. A definite method of standardisation by cutaneous test in goat is being attempted by us based on the test made for standardising antistreptoscarlatina serum.

Antitetanus Serum—Intensive immunisation of horses for the preparation of antitetanus serum has been a problem of considerable worry to us in this country. Rapid process of immunisation with large quantity of toxin antitoxin mixture in the beginning has not yeilded good result. Introduction of tapioca or alum with the toxin to stimulate formation of antitoxin has not been successful in our hand. It is rather unpractical in this country due to frequent formation of abscess at the site of injection. Very slow immunisation extending over a period of 6 to 8 months has proved to us to be the method of choice in this country. Frequent rest to horses is absolutely essential to obtain a high degree of immunity. Question of age of the horse, which is so much stressed in text books, is in

our opinion immaterial. Up to the age of 10 it is possible to obtain good antitoxin.

Antidiphtheria Serum—Antidiphtheria serum preparation has given us the greatest trouble, not because the process of immunisation is difficult but preserving the stock strain, from which toxin is being prepared all over the world, is extremly difficult. Once the stock strain is attenuated there is no method by which one can regain the original virulence. We had to suspend immunisation several times for want of good toxin. It is almost impossible to get good veal in this country for toxin production. Imported concentrated veal can be used successfully but it is too costly. This difficulty has, however, been overcome now since we have introduced veal infusion-free synthetic medium for the preservation of stock culture as well for the routine production of toxin. The process of immunisation has been further simplified by the discovery of Anatoxin (RAMO) with which a horse can be immunised successfully within 7 weeks, whereas it used to take 4 to 6 months before. Standardisation by intracutaneous and flocculation test has been successfully introduced in our routine work thus saving the cost of test animals.

Antidysentery Serum—Since the adoption by the Health Committee of the League of Nations of the suggestion made by the Standardisation Committee we have been standardising Antidysentery Shiga Serum. Shiga Antidysentery Serum is as specific in its effect on Shiga type of dysentery as antidiphtheria serum. For the standardisation dry toxin should be used as it is more suitable than any other toxin.

General Observation—We have carefully studied during the last 10 years the immunity response in horses we use for the preparation of various therapeutic sera. The most vexed question in our country is that the horses suffer terribly from heat during the summer and from flies during the day and mosquitoes during the night almost throughout the whole year. Due to these troubles the horses cannot get proper rest. It is impossible to expect a good immunity response in animals continually suffering from want of rest. Our technique is much more improved than what it was even three years ago but inspite of that the result is not up to our satisfaction. If we can solve the problem of giving adequate rest to these animals our yield will be three times more than what we are getting at present and sera will be half as much cheaper than what it is now. We are trying to solve this problem by erecting a mosquito and flyproof house at a large cost and we hope our attempt may be successful.*

* Paper read at the Scientific Section of the VIII All-India Medical Conference held in Calcutta, March, 1932.

Role of Widal Reaction in Typhoid Fever

By ANIL CHAUDHURI, M. Sc., M. B., D. T. M., Calcutta.

Widal, the Parisian clinician, was the first to adopt the agglutination reaction for the serum diagnosis of Typhoid. From that time this test has been employed upon thousands and thousands of patients by thousands and thousands of physicians throughout the world. But in modern times a growing suspicion is slowly creeping into the minds of a few physicians who do not consider it as a specific diagnostic sign and bring forward a number of instances where the Widal is positive, and yet the patient was cured either by quinine or by antimony. Or in other words, according to them Malaria and Kala-Azar sometimes give a positive Widal.

The agglutination reaction is specific in the respect that high dilution serum will agglutinate only its homologous bacteria and leave the heterologous ones uninfluenced. This relative specificity is of great clinical value. A serum suspicious of Typhoid or the identity of unknown bacteria by the use of Typhoid serum

can be established by the agglutination test alone. And nowhere else in the world has it been demonstrated that protozoa agglutinate under the influence of Typhoid serum.

If Typhoid bacilli, living or dead, somehow get an access inside the human cosmogony the serum will response to the clarion calls of Immunity, which can be demonstrated and gauged by Widal Reaction. Hence a positive Widal means that Typhoid bacilli are and must be inside the body and the patient must either be a convalescent or an inoculated or a carrier or actually suffering from the disease.

We all know that Typhoid fever runs by weeks, as it is a long continued disease. It devitalises the whole system by attacking the intestine, one of the vital organs in the body—the giver of nourishment to the system. Naturally the patient who is under its sway, loses the power of resistance, suddenly or gradually and thereby is prone to an attack of Malaria, Kala-Azar, B.Coli, or Tuberculosis either as an intercurrent affection or as a post-typhoid infection. Moreover, the flora and fauna of the intestine do not forget to take advantage of the opportune moment or inferiority complex on the part of the system and do not hesitate to throw their influence over the body through the inflamed and ulcerated Payer's patches. On the other hand it has been preached in season and out of season by competent and expert physicians that mixed infection and multiple infection are the rule in the tropics. Considering all these data how can we conceive that Widal reaction is not specific? A malarious patient can have an attack of Typhoid fever which begins with a rigor. A carrier of Typhoid fever may have an attack of Kala-Azar which can be cured by antimony. Thus we can safely conclude that Widal is always a diagnostic sign of Typhoid infection and OSLER'S Typho-malarial cases can never be a myth.

There is a phenomenon called Group agglutination: a typhoid serum agglutinating, a paratyphoid, colon or cholera serum. This is due to the presence of a biological relationship implying the existence of some common protoplasmic constituents. On testing the titre of a strongly agglutinating typhoid serum and a strongly agglutinating cholera serum, against Typhoid, Paratyphoid, Colon and Cholera bacteria we will always find a marked agglutination with homologous bacteria and very weak with heterologous—that is seldom above 1 in 25 dilutions. Hence it requires a tactful ingenuity in interpreting the diagnosis from laboratory reports on the part of physicians. In the absence of any other findings a dilution of 1 in 100 and above is a sure diagnostic sign of Typhoid infection, a dilution of 1 in 25 and above is a proof of Paratyphoid A., and a dilution of above 1 in 500 is a proof of Paratyphoid B. It may happen that a serum is positive to Typhoid below 1 in 100—let us suppose 1 in 80—and at the same time positive to Para A above 1 in 25—we may suspect that the particular infection is a Para A and not Typhoid and the rising of Typhoid titre is due to the phenomenon of co-agglutination. It will be helpful, of course, to test the serum in these cases from time to time and a gradual rise in dilution experiment will always point to the nature of infection. But it may happen that a double infection is present, in that case absorption test will surely clear up the situation. We should expect that when a serum is positive to Typhoid 1 in 100 and to Para A 1 in 25—the pathologist should state clearly the result of absorption experiment in his laboratory report. In that case the suspicion of the attending physician will be absolutely dispelled. In this connection it will not be out of place to discuss the question of relapses in Typhoid fever. It is said that Typhoid fever may relapse due to the following causes :—

(*i*) Colonies of the organism in the Spleen or Gall-bladder may be protected from anti-bacterial substances of the blood during the course of the disease and suddenly take up a fresh development when the resistance of the serum is somehow diminished.

(*ii*) There may be present more than one race of B-Typhosus.

(*iii*) The relapse may be due to the bacilli becoming "fast" or resistant to the anti-bacterial substances and thereby producing a recrudescence of the disease.

I will cite an interesting case of mine at Gobordhone Das Lane. The man named ASUTOSH DAS aged 40, a clock repairer, suffered from Typhoid fever for five weeks (July 1929). His serum was positive to Typhoid 1 in 80 and Para A nil. He remained afebrile for one week and suddenly had a relapse of his symptoms. His blood was examined for Widal and a culture was made from the stool. The Widal was positive to Typhoid 1 in 100 and Para A 1 in 25. Stool culture showed the presence of Para A. The conclusion therefore was that the man had a relapse due to Para A and not Typhoid. Surely we cannot conceive of re-appearance of B-Typhosus in the blood in the case of a relapse when the agglutinin might be expected to be extremely active. Indeed COL. BARNARDO, in a paper read at the 7th Congress of the Far Eastern Association of Tropical Medicine in the year 1927 and COL. LLOYD, by bio-chemical studies in the year 1929, have shown that a Typhoid relapse cannot occur in the presence of active immunity and some other secondary infections might be responsible for the havoc.

Widal reaction is a graphical response to immunity. Greater the Widal, greater the establishment of immunity. In fact R. B. LLOYD and S. N. PAUL have shown in a paper "Serum Protein changes in Malaria and Typhoid Fever" published in the Indian Journal of Medical Research No. 2 Oct. 1929, pp. 583, that there is always an absolute decrease in the albumin and an increase in the euglobulin (yet maintaining the Globulin Albumin ratio at its normal level) in typhoid fever as well as in Malaria and after T. A. B. Vaccination, which is nothing but an artificial production of miniature Typhoid. Administration of Quinine in Malaria and fall of temperature in typhoid fever have a distinct correlation. Both of these phenomena tend to bring the protein fraction changes to the normal level. Hence a high Widal should indicate the approach of a bio-chemical cure of the disease and may not be a clinical cure, which is dependant upon a large number of factors, such as, secondary infections, lowering of resistance, combined infection etc.

GAY (1918) has reported a most striking series of 98 cases of typhoid fever treated by intravenous injections of sterilised vaccine. The results were highly satisfactory in the case where the Widal is high. It may be said that he is successful in high Widal cases because immunization is completed more quickly by the added effect of intravenous injections of Typhoid Vaccines. But in fact where the Widal is low and euglobin is high in the blood in those cases or in other words, immunity is poorly established.

It will not be out of place to refer to four of my cases where I had used subcutaneous vaccine treatment combined with administration of Quinine in the form of Bayer's Aristochin. In all the four cases I was successful to bring down the fever to normal within three weeks and in all of them the blood culture showed positive to B-Typhosus on the 5th day. My idea was to raise the serum albumin and lower the euglobulin by the administration of Quinine, and by the administration of Vaccine to be able to raise the bactericidal substances and opsonins in the blood. I established my treatment on the beginning of the 2nd. week when the Widal is expected to be positive and continued the course till the patient gets full diet. Of course, the patients were compelled to fast for a longer period and solid diet was withheld persistently. The Widal was positive 1 in 100 and above in the cases, examined on the 3rd week. This passing reference though small, yet tends to show that we can artificially raise the immunity and thereby bring a rapid cure by combined Quinine and Vaccine treatment or not.

Thus we see that Widal is a response to immunity. A growing Widal is a good sign, a constant low Widal is an ill omen. A Widal above 1 in 150 means a heavy infection or a good bio-chemical response. A Widal below 1 in

100 means a mild infection or low bio-chemical response. If the question of secondary infection is set aside the prognosis is always good in typhoid positive to 1 in 150 or above.

In this paper the conclusion which I want to drive at is this, that the role of Widal in Typhoid is great and manifold. It is a sure diagnostic sign in the hands of experts though appearing in the 2nd week. In every case it should be recorded from time to time in the course of the disease as it is a good mile-meter in interpreting the result of treatment, cure, and prognosis. The bio-chemical cure alone without any possibility of relapse can be mapped out by this test, disregarding the question of clinical cure. A possible combined quinine and vaccine treatment can be established in raising the Widal Reaction. *

*Paper read at the Scientific Section of the VIII All-Indian Medical Conference held in Calcutta, March, 1932.

Management of Feeding in the First Year of Infancy

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Throughout the mammalian world each new born animal is intended by Nature to be fed on its mother's milk and in man the results obtained by breast feeding are far superior to scientifically conducted artificial methods. Closely considered, mother and baby is a unit. From the breast the baby gets a warm, clean, fresh and perfect food which is practically sterile. Its richness in immunizing bodies and ferments determines the strong resisting powers against infection in breast-fed babies compared to the extreme susceptibility to every passing ailment in bottle fed infants.

As man has now widely deviated from the path of Nature, he requires to be reminded of the inexorable laws, the violation of which causes inevitable suffering if not untimely death.

Immediately after delivery the infant is stunned as it were in the new surrounding and it must be allowed a restful sleep along with its mother for at least 6 hours before it is put to the breast. Throughout the nursing period, it must be given the breast at 3 hourly intervals for 8-12 minutes. It thus emerges that the child should have 8 feeds in 24 hours.

The time table is as follows : 6 A.M., 9 A.M. 12 noon, 3 P.M., 6 P.M., 9 P.M., 12 midnight.

The feed due at 12 midnight is omitted at the end of 1st week and that at 3 P.M. stopped at the end of the 2nd week.

This nightly rest improves the health and nutrition of the mother and consequently the quality and quantity of milk.

It has just been mentioned that the child should not be allowed to suck for more than 12 minutes at a time. He must not be allowed to fall asleep while sucking.

Too prolonged sucking causes aerophagy and sore nipples. The best plan is to give one breast for each feed—the two breasts thus being used alternately. About $\frac{3}{4}$ of the breast content is drawn by a healthy vigorous baby in the first 5 minutes. If the infant does not sufficiently empty the breast at first, a pump may be used to relieve the mother of discomfort.

In case where an infant cannot obtain sufficient milk from one breast it should be allowed to use both breasts at each feeding. It finishes one breast and is put to the other breast next. The breast partly emptied in the last feed is given first on the next occasion.

On the 3rd day after birth the baby is weighed and the weight is compared with the weight at birth. There is a physiological fall in weight during first week by 10% and the birth figure is reached by the 2nd week.

A test feed is arranged to determine the amount of mother's milk in 24 hours at the end of the 1st week. The baby is weighed before and after each meal and the difference gives the

amount of breast milk obtained by the child in the feed.

A test feed to be of use should include all the feeds in 24 hours and the total is the 24 hours' supply. During the first fortnight the child requires 50 calories per kilo and then 100 C during 1st, 90 C during 2nd, 80 C during 3rd and 70 C during fourth trimester. It is to be lessened by 25% during hot months.

Taking the birth weight to be 3 kilos the breast milk ought be be 300 C=450 c.c.=15 oz. The weight doubles in 6 months and trebles at the end of the year. One litre of milk is equal to 670 C. The monthly increase is about $1\frac{1}{3}$ lb.

Throughout the infancy, a reliable scale is an absolute necessity to the pediatrist like a stethoscope and a thermometer.

The quantity of mother's milk in 24 hours needed for the baby can be worked out by simple mathematics.

There may be a variation of 10% either way.

It has been mentioned at the outset that the infant and the mother is a unit. Its working makes a medical man of introspective temperament filled with spiritual ecstacy so that he thinks twice before interfering with any natural course of events where he has to manage a sickness with diet and drug.

The tissue of the newly born baby is 10% more watery and comparatively richer in its total glucose contents. The capacity of the stomach in the 1st week is about 7 gram, by the 2nd week it is 45, at the end of the 1st month it is 90 gram, afterwards it increases by 25 grams every month.

The breast accordingly does not secrete milk in the 1st week except a little colostrum which is pus like in appearance. It clears the alimentary tract by its laxative action preparing the tube for the mature milk which is established by the 14th day. The infant during the colostrum period undergoes physiological dessication by water excreted from various channels living on the extra supply of sugar with which it is sent *ex utero.*

The quality and quantity of the milk progressively alter in strict unison with the anatomical capacity and functional capabilities which increase day by day. The meddlesome heretic gives feeds of cow's milk and sugar water thinking that the breast milk is delayed or deficient and a vicious circle is established for there is no galactagogue so powerful to the breast as the vigorous sucking of the hungry baby. We all know how the withered breast of the old granny secrete properly when her dear own grand child sucks at them playfully.

The baby during this colostrum period being fed, does not get hungry and he is not inclined to suck strongly. The breast deprived of the natural stimulation secrete less and less. Meanwhile the child is fed more and more from the bottle and finally the breast suspends its work in revolt. This is the story of the failure of the milk in large number of homes as one could make out in one's limited experience particularly amongst people who boast of education and culture. The failure of breast feeding in our province has nothing to do with the morbid idea of the æsthetics, social functions or economic employments of nursing mothers.

This meddlesome feeding cannot be too strongly condemned. When breast milk is insufficient the deficit is to be made up by milk mixture after each feeding. This is called complementary feeding and when one or more complete feeds are given per bottle in gross quantitative inadequacy it is called supplementary feed. At the same time one should try to improve the supply of breast milk by giving the mother more generous diet of dairy produce and good restful sleep. She must cultivate a strong desire to nurse the child.

There must be regular emptying of the breast by the pump if the child fails to empty them of the milk given to the infant. The baby must take first from the breast what he can.

Hot and cold douche alternately to breast with massage have been tried but the simple device is to give the mother more water to drink shortly before feeding her baby.

Breast feeding should be continued during the entire first year so that in case of disease of the child, it may be fed on breast milk only. During first 3 months nothing should be given in addition to breast milk.

Feeding with milk cereal should be started on 4th month. On the ninth month the process of weaning should be gradually instituted. One breast feed after another should be replaced by cow's milk so that in the 12th month a single breast feed per day is given. No breast feed should be given after 1st year. The weaning should be gradual and in summer months it must be very slow. When there is some constitutional disease in the mother like P. P. and grave anaemias or acute infective diseases, breast feeding is to be stopped. So also when there is progressive loss of weight of mother without any other demonstrable cause.

In acute gastrointestinal disturbances of infants, mother's milk is to be stopped wholly or partly for a time. That is a long subject beyond my scope.

Although breast milk and cow's milk are compared side by side in every text book, their variation is too fundamental because of biological and chemical differences. Cow's milk is a food for a different animal and its mineral content is different qualitatively and quantitatively. MARIOT has shown that cow's milk injures the stomach for its high buffer value.

The average cow's milk may be considered calorically equivalent to the average human milk.

	Human Milk.		*Cow's Milk.*
P.	1·7	...	... 3·3
F.	3·7	...	... 3·7
Cb.	6·7	...	... 5·0
Sal.	0·3	..	... 0·7

If we divide the Proteid content by Proteid and Lactose we get a ratio corresponding to the ratio of growth of various animals. The more rapid the growth the larger the quantity of nitrogenous substance.

In human and cow's milk fat contains ½ the total caloric value, the remainder is made up by albumin and lactose. VON PIRQUET has introduced a definite quantity of human milk to replace the calorie as the unit of nutrition. One gram of human milk by oxidation produces 0·67 calorie. It is called a NEM (Nutrition equivalent milk). This is very advantageous inasmuch as it bears a definite relation to the body surface, digestive surface and sitting height so far as the food requirements are concerned.

In cases of failure of mother's milk ⅓—½ the food requirements are met from wet nurses directly or from bottle.

The remainder is given by cows milk:

(1) as *equal food*
50 c.c. cow's milk
and 50 c.c. 17% sugar.

(2) Butter milk which is half food made equal food by 3% चूडा and 6% sugar.

(3) Albumin milk of FINKEL STEIN 1 litre of milk boiled in water bath for ½ hour. 1 table spoonful of SIMON'S pepsin is added until coagulation takes place. The mixture is drained in a muslin bag and curd washed in a wire gauze sieve 3-6 times with ½ litre of water and ½ of butter milk.

10 grams चूडा and 66 grams sugar added=equal food.

(4) Whole milk.

(5) MARIOT'S Lactic acid milk 8 c.c. of 75% lactic acid in a litre of milk. Bottle feeding needs scrupulous cleaning after each feed by boiling and brushing with teats inside out. More care is required in summer months.

It would, therefore, be preferable to feed by spoon which is more economical, cleanly and managed with ease.

Since the synthetic making of infant food by LEIBEG, the market has been flooded by intriguing manufacturers with proprietory foods. They have an advertising propaganda under pseudo-scientific garb. Most of them contain starch and sugar with dried milk. According to their instructions most of them are prepared with addition of boiling water. In so doing the starch

elements are not completely cooked and as such inflict incalculable injury to alimentary tract. We have indicated how cow's milk can be modified for various exigencies. Many more methods can be given should occasions arise.

To give starch, we have got many homely preparations the nicest on earth and they are very cheap: such as चूडा fried, खइ powdered rice, मूजि. They are fresh and cost is insignificant.

The proprietory foods come from beyond the seven seas and because of their long storage turn rancid and foul smelling in a few days after opening in a hot climate.

On many occasions they are found caked in the bottle and unsuitable for human consumption.

Medical men everywhere devise sick room dietary from their every day articles of food. This is the reason why the infant diets of the continent differ in details from those of Great Britain and America.

HEMMING in 1881 found that in children as well as in adults the length of intestinal canal proportionately corresponds to the sitting height. We all know that in an average individual every part of the body bears a certain relation to the length of the trunk.

The length of the intestinal canal on an average=10 times the sitting height and the circumference is $\frac{1}{10}$ s.h.

We can therefore find the conception of the absorbing surface as 10 sh. $\times \frac{1}{10}$ sh=sh^2. It is called nem siqua and=height and amount of food in gram of human milk that can be managed by the organism. This is the theoretical maximum. In practice it is divided by 10 called decinem siqua. 3 dn. is the *minimum* amount of food that maintains weight while lying in bed. This is required for the work of heart, lungs and large glands like liver, thyroid etc. 7 dn. is the maximum which can be managed without impairing alimentary canal and health.

Aequum is that amount of food which maintains weight under given condition of activity. It is 1 dn. more than minimum for a person of sedentary occupation.

Optimum is the amount that one should take to maintain health. In adults optimum is aequum but in infants optimum is greater than aequum as we want them to grow, hence we add 1 dn. to aequum. The full amount provides for growth in length and breadth (putting on fat). In fat subjects we may want to diminish weight. So optimum may be 1 dn. siqua less than aequum.

The amount of nutrition to be ordered may be chosen freely within the range of aequum and maximum. This is called the *nutrition distance or tolerance* limits.

In diseased condition, enteral or parenteral, this nutrition distance gets narrow and it may fall even below minimum when the organism lives at the cost of its own tissue and unless this state of affairs is of short duration there supervenes great emaciation and unless controlled finally in death by exhaustion and intercurrent infection. The dietetician must always remember this tolerance limit, otherwise, in his zeal to feed he will do positive harm to the patient instead of good. Food beyond telerance limit will not only not be digested and assimilated but will do positive mischief by its mechanical and chemical irritation and will further lower down the tolerance to the dangerous level below minimum.

This conception of the physiological mechanism of food we owe to the life rule of VON PIRQUET which took him more than a decade to complete. It has given the feeding a mathematical precision.

It may need modification and change like every human effort and understanding in the light of facts and figures of future. But every one will be awestruck by the amount of patient work he has done in the laboratory and the ward to get the clear cut conclusion. We all bow down to the memory of the great sage for the creation of a definite science out of chaos.*

*Paper read at the Scientific Section of the VIII All India Medical Conference held in Calcutta, March 1932.

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Editorial Comments

It will be remembered that the Bengal Legislative Council, seized with the fever of retrenchment, appointed a Retrenchment Committee whose report we now await. We have had retrenchment committees before but in the main, their recommendations have proved infructious ; we hope however that this committee will have been appointed to good purpose, that its recommendations will be wise and far-reaching, that its recommendations, will prove more acceptable to Government than those of the Mukerjee Committee of some years ago. One important direction in which the Retrenchment Committee has good opportunity for wielding the axe is under the head of Medical Service in the province. It is a question that calls not for cheese-paring but for a larger vision and radical alterations in the organisation of the Medical Services. It needs sincerety and no little courage on the part of the Committee to tackle the problem properly. To this end the Bengal Branch of the Indian Medical Association has made an extremely helpful contribution and we may, with some advantage, refer to some of the main recommendations contained in the statement submitted by the Bengal Branch to the Retrenchment Committee.

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As is well kuown there are two branches of medical administration in Bengal : First, the Civil Medical Department controlled by the Surgeon General, and second, the Public Health (and the Sanitary Engineering Department) controlled by the Director of Public Health and the Chief Sanitary Engineer. The former has 35 I. M. S. officers in addition to the Surgeon General with about 156 Assistant Surgeons. The 35 I. M. S. officers entail in pay and allowances an annual expenditure of over 8¾ lacs. It is of course an anomaly that civil medical appointments should be filled by what is a military service and it is regrettable that Assistant Surgeons, quite as worthy and from four to five times less expensive, should be debarred from these appointments. Not only has this injustice served as a damper to ambition on the part of Assistant Surgeons but it is also an expense which could be greatly reduced by substitution of these I. M. S. officers by competent Assistant Surgeons. Unfortunately the I. M. S. are appointed by contract with the Secretary-of-State aud whatever the Retrenchment Committee may recommend it will appear that the situation can only be altered as a result of the Round Table Conference, at which indeed a provisional agreement has been reached ; till then, of course, we will have to endure the bar. If, however, such a recommendation could be carried out at once it is estimated that an immediate saving of over 8 lacs a year could be effected.

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There is no doubt that the administration is top heavy and we may instance the case of the Chemical Examiner's Department in Calcutta. The pay and allowances of the I. M. S. Chemical Examiner in the Public Health Department is equal to the pay and allowance, of 4 Civil Assistant Surgeons, a number of Laboratory Assts, Assistant Chemical Examiners, clerks and menials. The disproportion in public health expenditure may be realised when out of a voted expenditure of over 46.3 lacs only Rs.85,000 is provided for rural dispensaries.

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The most important recommendation is the abolition of the post of the Director General I. M. S. This follows naturally on the suggestion that the existing Civil Medical Department should be amalgamated with the Public Health Department under a Ministry of Health, and managed by a Director of Health as the

Chief Executive Officer. This is in keeping with the recommendations of the Inchcape Committee.

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In regard to the post of the Superintendent, Presidency General Hospital it is thought that it might well be made an honorary appointment, infact, the application of a system of honorary appointments is suggested in the case of hospital administration. The success that has attended the system of honorary appointments in Madras suggests the application of the same principle to Bengal. Indeed in this support is to be found in the recommendations of the Royal Commission on Labour, to say nothing of the practice that exists in other countries England, France, Germany, U. S. A. We go further and state that unless some system of honorary medical workers is adopted in this province the medical needs of the people of the province will remain as at present largely neglected. This recommendation of the Bengal Branch of the Indian Medical Association is on sound lines and we hope that it will be given close consideration. If, as we suggest, a completely honorary system is not possible of achievement, a method of small honorariums to cover incidental and personal expenses might be found suitable as an alternative. This does not mean that the Bengal Association intends that Assistant Surgeons should be deprived of their services, for this proposal contemplates their absorption in the Public Health Department, where their services are greatly required.

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It is not possible to follow the Committee in all its recommendations. The statistical information provided is revealing and indicates the necessity for close investigation into hospital administration. In the end, the Association has shown a large reduction in the medical budget over 11½ lacs, but in view of the pressing need for wider and more efficient medical and health services it is proposed that 4 lacs of this amount should be diverted to the Public Health Department and about 2½ lacs for the improvement of teaching institutions and hospitals. There is always the fear that a conserving desire for retrenchment may lead to the effecting of savings at the cost of efficiency and curtailment of necessary existing services. When medical and health services are concerned, however, such a course is exceedingly dangerous for it can only result in a rise in the mortality figure. The public could not tolerate it and the Bengal Branch of the Indian Medical Association has wisely avoided this pitfall. It has shown how savings may be effected by re-organisation while maintaining greater efficiency and increasing the extent of the medical and health services to the people.

Indigenous Drug Industry

By SUNDARI MOHAN DAS, M. B.,

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The world being round persons travelling in opposite directions sometimes meet. In the early days of our practice, the followers of the Western and the Ayurvedic systems ran in opposite directions. With the progress of catholicity on both sides we have met and rubbed shoulders together. Many of the old school have now come to realise that unless they assimilate some of the western methods and use some western drugs their existence is endangered while those of the new school find some of the old Ayurvedic methods and drugs quite effectual and that there should be "give and take" between the schools.

During the late Great European War this idea was enhanced on account of the stand-still condition of the importation of drugs. Some unscrupulous firms demanded fancy prices for some of the imported drugs they had already stocked. War ceased. Importation re-commenced with vengeance. From about Rs. 75,000/- many years ago, the value of the imported drugs and chemicals swelled to 2 crores 26 lakhs 25 thousand in 1920-30.

The question of quality was eclipsed by the question of quantity. Medical practitioners of long experience, exchanging notes among themselves, agreed that some drugs which some years ago they had found very effectual did not give them that good result and that the dose had to be increased sometimes 3 to 4 times in order to get that result. The question of adulteration and deterioration confronted every mind. In 1924 the Public Health Committee of the Calcutta Corporation brooded over the matter. Sections 405—426 gave them some power to deal with the question. Section 406 (1) says :—No person directly or indirectly, himself or by any other person on his behalf shall sell, expose or hawk about for sale or manufacture or store for sale, any food or drug which is adulterated or misbranded.

The Committee on enquiry were convinced that adulterated, misbranded or under-strength drugs were being sold and that unscrupulous vendors have been importing under-strength drugs from unscrupulous firms outside India in order to compete and satisfy the craze for cheap medicine. But as the Government took no steps in that direction by special legislation, much could not be done by the Committee except destroying bad drugs and prosecuting some local firms.

Thus far the negative side of the question. What could we do to put our house in order, to improve our existing manufacturing firms and the unlimitable stock with which India abounds ? From the evidence placed before the Drugs Enquiry Committee, it is quite evident they are satisfied that many imported drugs are not only of under-strength but deteriorate after sometime owing to climatic difference and other causes.

Could we make India self-contained with regard to drugs, the question was reiteratedly troubling active minds. Could we not more scientifically collect herbs etc., guided by the vast experience of Ayurveda and utilize them in order to prepare a rich Indian Pharmacopoeia ? Diving deep into the ocean of Ayurveda one will be astonished to discover how several centuries ago our physician sages sounded useful notes about collection of drugs and their utilization which, may be designated as so many pearls. It is mentioned in the *Charaka* that once in a summer season MAHARSHI ATREYA was airing himself in the woods on the bank of the Ganges in the Kampilya, capital of Panchal, when his favourite disciple AGNIVES asked him how to prevent epidemics which were decimating towns and villages. After describing the causes of epidemic ATREYA pointed out the methods of prevention and of collection and utilization of drugs, according to the quality of their sources and the appropriateness of seasons etc. SUSRUTA goes into details and minutely describes the modes of collection, the nature of the soils which particularly enhance the quality of particular drugs and the appropriate season during which certain drugs attain the highest strength and the degrees of elevation according to which certain plants attain certain properties.

We are now told almost the same things by Westerners. MR. BHIM CHATTERJEE, an engineer and botanist, made some expeditions in the hills, collected some rare plants described in Ayurveda, tried to cultivate them here but failed for many reasons, one of them being lack of funds.

The Drugs Enquiry Committee in page 122 says :—"Important Medicinal plants such as Digitalis, Ipecacuanha, Cinchona, Jalap &c. have already been grown in India and there is no reason why the country should not grow almost every drug needed to supply her own wants and at the same time develop a large export business. Vast tracts of land are available in this country which, if utilized for systematic cultivation, will make genuine drugs available to the people at a reasonable price. In countries like Germany

and Belgium, medicinal plants and essential oil gardens have proved a great success. The State authorities in France and America have displayed a great deal of interest in growing drugs on an intensive scale. In the United States of America there is a Bureau of Plant Industry attached to the Botanical Survey Section of the Department of Agriculture where all questions relating to the development of drug industry are considered. This Bureau sends its agricultural expert to various parts of the world to investigate the climate, soil and environments suitable for the growth of a particular plant with a view to introduce it into their own country. Even the Commonwealth of Russia has started a bureau for carrying a drug trade."

We need not at present roam over the world to investigate the environments suited to the growth of plants with which India abounds. A glance at the Import and Export figures will, to some extent guide us as to the line we should adopt. Benefited by the vast experience accumulated in the old Ayurveda store we may safely reach a starting point. The figures convince us of the fact that raw materials are purchased at a nominal price from those who are ignorant of their prospective value, are exported to foreign firms and are returned as finished products fetching several times their original price. If we are determined to manufacture these finished products on a large scale at home, there will be no difficulty on the score of collection of raw materials as in days of yore. In those days the physicians had to collect herbs from cow-herds, sanyasis, hunters, those who roamed in the wilds and lived on roots of plants etc.

Gopala stapasa byadha jechanye banacharinah
Mulaharashcha ye tebhyo bheshajabyaktirshyate.

We have now rich manufacturing firms in the country who can form themselves into a syndicate, arrange for collection of materials and utilize them for manufacture of finished products for which they have to pay dearly and bleed their customers profusely.

Excluding chemicals and narcotics, India exports raw materials for drugs worth 27¼ lakhs. In return we get finished products valued at 2 crores and 26¼ lakhs, *i.e.* at more than 8 times the price of the materials we send. You will be surprised to learn that we have to buy a common thing like *tunte* or copper sulph. from outside India at a cost of 5 lakhs, alum or *phatkire* worth Rs. 3¼ lakhs, acids Rs. 62 thousand, arsenic (*senko*) 1¼ lakhs, caustic soda 19 lakhs, bleaching materials 7 lakhs, sulphur 20½ lakhs, *Heng* or asafoetida 1½ lakhs, camphor 31½ lakhs, proprietory medicines 48½ lakhs, quinine salts 28¾ lakhs.

Shall we listen to these tell-tale figures and remain quite unconcerned? Does not the question of manufacture and control of drugs vitally affect the interest of our patient? Consider the question first of all economically. Is it not a fact that the bugbear of a highly expensive treatment scares many poor patients away who are compelled to resort to quackery or to less expensive system? And then do not the life of a patient and the credit of a physician depend upon the stable property or proper strength of a drug? I have already mentioned the fact that some of the imported drugs are not of proper strength and some deteriorate after some time; and some have been found quite useless after having been used since time immemorial, for example Ergot. In my experience, its commencement dating as far back as 1882, the B. P. Liquid Extract of Ergot was found not of much use, and still all like myself had been at the dictate of our Western teachers blindly using that drug. Modern researches have proved that this B. P. preparation is most unreliable, unstable and devoid of the most active principle *Ergotoxine*. Since some years we have been using proprietory drugs instead. Ergotamine tartrate has been preferred to Ergotine citrate. As regards test the cock's comb method had been in vogue for the qualitative estimate of ergot preparations. In 1914 the test proved to be illusive. This is only one of the many instances how we are swept away in what they call the *gaddalika prabaha* of time-honoured methods without questioning the correctness of our position as the custodian of our patient's health.

Does it not behove us to find a way out of these difficulties? Two questions require considerations:

(1) The quality of the drugs we use. Enthusiasm about the boycott of foreign drugs which was worked to a boiling point as soon as the Papal Edict from the British Medical Council excommunicating the Indian Medical graduates came, has proved to be a volatile substance. We must be practical. In a question of life and death of our patients we must not be carried away by enthusiasm. We must have a guarantee of the standard of the drugs, imported or home-made. For the purpose a committee of experts must be formed.

(2) The second question of utilizing the raw materials for the manufacture of drugs by scientific methods and thereby leading to the formation of an Indian Pharmacopœia we should try to find ways and means. The manufacturing firms may be induced to form a syndicate for the purpose of collection and manufacture on a commercial scale. The Expert Committee may carry on tests in the chemical, pharmacological, pharmacognostical method and put their hall-mark over the reliable and standardized drugs. Our distinguished countrymen,

COL. CHOPRA of the Tropical school, DR. BRAHMACHARI, DR. KARTIK BOSE, DR. SIDDIQUE of the Tibbi College of Delhi and several others, are doing splendid work in that direction.

A rumour of the foundation of a State Faculty of Ayurveda to develop Ayurveda and make India self-contained as regards drugs is in the air. Let every thing be done on a scientific basis. The old methods of relying alone on the naked eye or naked ear are out of the place. We have now the eye's eyes—the microscope and X' Ray ; the ear's ears—the stethescope, the phonendoscope, the microphone etc., the hand's hands—the apparatus which dive deep into the bowels of the earth and compel her to yield her resources for our benefit ; the leg's legs—the railway, the air service which may carry us anywhere for researches and above all the accumulated treasures of knowledge lying at our command for utilization all the world over. Let us not forget CHARAKA's counsel that that is true drug which cures diseases.

Tadevang jukta bhaisajang jataragyaya kalpyate.

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Some Problems of Medical Licentiateship in India

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Ours is a peculiar country, and in several respects dissimilar to the Western country with which it has fallen to our lot to associate, and whose culture has partly been thrust on us, and partly we are trying to emulate, sometimes blindly, at other times with our eyes open, and in some cases for good, in others for evil. Two dissimilarities which stand out prominently and have a very important bearing on the question of standards of medical education and qualifications in India are : (1) the economic condition of the masses and (2) the geographical distribution of the masses in villages and towns. It is imperative to keep these two factors constantly in mind when considering the subject under discussion.

The Past is almost always depicted in bright colours, particularly in the East, and the Future is looked through dark and dim glasses, whilst the Present is left to look after itself in a somewhat indefinite and uncertain manner. But in reality it is the Present that matters, for the Present will make the Past and if your Present is good you need not bother about the Future. Those who like to live in the Past—and they are to be pitied most of all—talk of our motherland as the Golden Sparrow or the hen that laid the golden egg. She may or may not have been a wonderful bird of that sort, but she certainly is not now. There is no denying the fact that to-day the average Indian purse is extremely shallow and more often empty than not. Its contents which do not suffice for even the bare necessities of life can certainly not provide costly commodities and a medical graduate is undoubtedly a costly commodity for an average Indian, particularly a poor villager, and will continue to be such so long as the economic condition of the masses does not show marked improvement.

Then, we have to remember that more than 80% of our people live in the small and scattered villages, and to seriously consider whether these villages can attract, at least for a long time to come, our medical graduates who, generally speaking, coming from urban areas are apt to feel the absence of social amenities in rural areas, and who having had to spend a lot of time, energy and money in acquiring the degree qualification naturally expect reasonably adequate fees for their services.

Should there be two standards or one.

When these two factors are borne in mind it is not difficult to answer the question "Should or should not there be in our country a medical qualification of a lower standard than the university degree" ? It is not necessary for me to enter into a controversy on this point. The question was ably answered by the Hon'ble MALIK FEROZ KHAN NOON, Minister for Local Self Government, Punjab, in his presidential address to the All-India Medical Licentiates Association at its 23rd conference, held at Lahore, in 1929, when he said that "the great object with which the existence of a lower standard of education than the university degree was being kept up was that there was need for the province of cheap medical aid in the villages of this country and considering the financial circumstances of the public it seemed essential that they must keep up a body of doctors whose fees were not so heavy as to keep off the average poor man." Many others, including some responsible members of the Licentiates' Association have given a likewise answer. For example, at

the last annual conference of the Indian Medical Association, held in Calcutta, DR. S. RAM SINGH one of the delegates from the Punjab, when considering the question whether it was necessary to maintain two classes of medical practitioners in our country had said "I have consulted the leading physicians in the Punjab in this matter and I am of the same opinion with them, *viz.*, that in view of the vast area of our country and the economic condition of our people it is necessary, at least for some years to come, to maintain two classes of qualified medical practitioners." SIR NILRATAN SIRCAR at the same conference went in his presidential address even a step further when he considered the advisability or necessity of having "a grade of scientific education on western lines lower than that imparted to the licentiates now" and when he expressed a wish that "the future holders of qualifications of the indigenous medical schools started in various centres like Madras, Benares and Calcutta will be considered quite fit to deserve recognition as medical practitioners." As the point raised by SIR NILRATAN is not germane to the subject of my paper I shall pass it over without making any comments on it, howsoever great the temptation to do so may be. But I would invite the attention of DR. A. D. MUKERJEE to it who seems to have smelt a rat where none exists. He is reported to have made the following remarks at the same session—"The creation of two classes of medical practitionors had not the support or consent of the people or the medical profession of this country. It was created by the Government to suit their own purpose so that thay might conveniently exploit one class or set one class against the other. Divide and rule has been their policy in this medical sphere also." May I ask DR. MUKERJEE what he thinks of those members of his profession and class who still advocate the maintenance of two classes of practitioners, and of SIR NILRATAN SIRCAR who pleads for the creation of a third one (if I have not misunderstood him)? Does he accuse them of having entered into an unholy alliance with the Government in this matter? No, I would earnestly and sincerely request him and others of his views to give even the devil his dues and not to smell a rat where there is none. It is all very well to say that the differences and distinctions should be levelled up, but we must see how far that is possible and practicable. Mere sentiments, platitudes and pious wishes will carry us nowhere in this matter-of-fact world. If we want to progress we must face facts fair and square, gird up our loins and make up our minds to courageously overcome whatever difficulties may come in our way. Our masses live in our villages where qualified doctors are few and far between. It should be our aim, rather it is our duty to remedy this defect. In trying to devise ways and means for it we must not lose sight of the two factors to which I have alluded in the beginning. We must turn out material which will suit our requirements. In other words, we must have cheap doctors for our poor masses—doctors whom we may be able to induce without much difficulty to practise in rural areas. Such doctors are and will be the licentiates. They have got the geographic factor in their favour. Majority of them are born and bred in the country and are, therefore, much more likely to settle there to practise. They spend comparatively much less time, energy and money in acquiring the diploma of Licentiateship and are hence more likely to be satisfied with modest remuneration for their services. To my mind, a greater difficulty than this is how to produce the enormously large number of doctors we require for the needs of our rural population. SIR NILRATAN SIRCAR suggested one way to which I have referred above, though in a different connection. His opinion must carry a good deal of weight, but to be true to myself I must make bold to speak out frankly and say that I beg to differ from him. The hotchpotch he proposes to create will make confusion worse confounded and add to our difficulties and intricacies of the problem. To me, the only feasible proposition seems to be to augment the outturn of our medical institutions and to open out more where the existing ones do not suffice.

Another difficulty with which, however, the Government alone is concerned, in doing away with the lower standard of education is the Subordinate Medical Department, both in the Civil and the Military, requiring the services of Sub-Assistant Surgeons on a starting salary of Rs. 70/- now reduced to about Rs. 52/- P.M. Unless that is abolished and the Government agrees to recruit medical graduates instead on a living wage, let us say at least Rs. 175/- per month I do not see how this aspect of the question can be solved. When I say this, I assume that the Government is not prepared, at least for the time being, to give up the present system of services in favour of the system of employing honorary workers or workers on a subsidy. To say that some medical graduates (luckily an insignificant number) do not mind working as Sub-Assistant Surgeons on the degradingly low salary mentioned above is no argument. At any rate, we must not encourage them to do what would degrade the Indian Medical Profession. Their number has been very small and that too will vanish were the licentiates to be removed from the field of competition.

What should be the preliminary qualification and course of studies.

Having thus accepted the necessity of two grades of education (and the Indian Medical Association had also come to the same conclu-

sion at the last issue) the next and the more vexed question is "what should be the preliminary qualification for admission to Medical Schools and what should be the course of studies thereat" ? The Indian Medical Association resolved "that the preliminary qualification for admission to all medical institutions should be the Intermediate Science Examination Certificate of different Indian universities or its equivalent" and "that the training of the Licentiates should be improved by extending the period of instruction in the Medical Schools to at least 5 years throughout India." What was the underlying factor which led to the passage of that resolution ? Not to improve the status of the Licentiates *as a class*, not to remove the stigma of a lower qualification, not to improve the lot of those of them who may be employed as Sub-Assistant Surgeons, not to enable them to enjoy all the privileges which are extended to medical graduates by medical councils, insurance companies, Government offices and Courts and not to "do away with the water-tight compartment system that is in existence at the present moment among the medical practitioners of this country" but simply to "enable the more aspiring of the class to come up for higher medical degrees under the university" as put by CAPTAIN P. B. MUKHERJEE, the mover of the resolution. DOCTOR ANIL CHAKRABARTY let the cat out of the bag by citing his own instance ; this is what he said "I was a student of the Campbell Medical School. I passed out of that School and then I experienced a lot of difficulty in seeking admission to the Carmichael Medical College much of which would have been obviated if I had passed the I. Sc. examination. The University regulations stand in our way in going up for the higher degree examinations unless we have passed the I. Sc. examination previously." It is not because I. Sc. is a higher qualification than Matriculation, and that its holders may be better fitted for the study of medical science that it is recommended ; it is only because the University regulations demand the I. Sc. qualification. What a narrow way of looking at things ? May I put to the supporters of the resolution to scratch their conscience a little bit and say honestly and truly whether it is fair to saddle the vast majority of the Licentiates with an extra three years' expensive and hard training for the sake of those few who may afterwards like to try for the higher qualification ? DR. P. NANDI took a saner view of the question. He said ".....it must be assumed that we accept two kinds of education.....If you insist on the same preliminary qualification, (and I would add "the same 5 years" course) why not give the same degree ? Why call one class Licentiates and the other Graduates ? If the start be the same why not the same goal ? I do not think any case has been made out for changing the preliminary qualification for admission into the Medical Schools. The education imparted in these schools is quite good and the men turned out are also quite good. Then again I do not think there is any necessity to extend the course from 4 to 5 years in the case of these boys. A four years' course is quite good for their education. If you like, you can arrange for a Post Graduate Course for two years in the case of some of them who aspire to it. But do not extend the course by one year for all of them. We must not forget that most of these doctors will practise in rural areas and that there is a very great dearth of medical men in the villages of our country." I beg to be excused for this lengthy quotation but as it puts the whole thing in a nut shell, without any sentiments or prejudices, I could not resist the temptation of reproducing it. Even DR. S. RAM SINGH, who is second to none in his efforts to improve the lot of the Licentiates, said that when it had been decided to retain the lower standard there was no need to make the entrance qualifications for admission into the medical colleges and medical schools the same.

He, while recommending the Matriculation Certificate as the necessary preliminary qualification for admission to schools, proposed a rider requiring the study of two science subjects in the Matriculation standard. In my opinion this is wholly unnecessary (though I will not mind if it is carried into practice), because I can say from personal experience of about 7 years that those who join the Amritsar Medical School without having studied any of the science subjects in the Matriculation standard do as well as those who have had the previous advantage of that study. Perhaps the reason for this is the extremely low standard of education in the science subjects in our High schools. If a proviso of this sort is needed it should be on the same lines as for the F.Sc. medical group, of the Punjab University. This would mean that only those who have studied Chemistry and Physics up to the standard of the First Professional Examination of the Punjab State Medical Faculty, or its equivalent, as compulsory subjects in the Matriculation standard will be eligible for admission to medical schools. This qualification could be called "the Matriculation (medical group) Certificate." If our Universities could be induced to start such a qualification it would do away with the teaching of Chemistry and Physics in medical schools and enable the time saved thereby to be devoted to the teaching of other subjects. One material advantage of this will be, in actual practice, an addition of about one extra year to the course of medical studies proper—

just what many are clamouring for. It will not, of course, satisfy those who are enamoured of the figure "5," but should satisfy those who are really and genuinely keen on better training.

The opinion of DR. SUNDARI MOHAN DAS also is worth quoting. After pointing out how some professors thought that most of the college students, who were either I.Sc. or B.Sc. could not follow the lectures properly he said "So I do not see how the insistence on the I.Sc. certificate will improve matters. In our School there are both I.Sc., and Matriculation students and on enquiry from the Demonstrators as to how they shape, I learn that the Matriculation students generally do better than the I.Sc. students because the latter do not care—they behave as if they had mastered the sciences. Then again there is the question of finance which we must not ignore. We are going to propose the extension of the course from 4 to 5 years. If we insist on the I.Sc. certificate for admission, that means another 2 years and our experience tells us that very few of the students pass all the examinations in one chance." CAPT. S. K. BOSE did not agree with DR. DAS: he thought that the I.Sc. students generally did better than the Matriculates. The divergence of views is, I think, not difficult to explain. My experience of about 12 years tells me that as each student has got a maximum limit to his capacity for work and understanding it all depends upon whether you take in men with a high limit or with a low limit. I noticed first in the King Edward Medical College, Lahore, that B. Sc's., with rare exceptions, did very badly. On going into the matter I found that they were generally those who having obtained very low marks in the F.Sc. (F.Sc.=I.Sc.) could not secure admission to the college on passing that examination, so went up for the B.Sc., passed it in the 3rd Division and then got admitted. In other words they were below par throughout before joining the college and remained the same thereafter. Subsequently, I found the same thing in the Amritsar Medical School. I was keen on admitting Intermediates in preference to Matriculates, but unfortunately could get only 3rd class boys as the first and second class went to a college, Medical or Arts. Now, although these Intermediates had studied Chemistry and Physics of a much higher standard yet they were invariably beaten hollow in these subjects by the first class Matriculates so much so that none of them could win a merit scholarship awarded on the result of the First Professional Examination in Chemistry and Physics only. In fact they would not appear in the examination lest they came down (First Professional Examination is optional for F.Sc.). In other subjects too, and in following the lectures, they fared no better. Hence we had to introduce a graded competition among the Intermediates and Matriculates for admission to the School whereby only a first division Intermediate is preferred to a first division Matriculate, a second division Intermediate is preferred to a second and third division Matriculate but not to a first division Matriculate and so on. The result of this has been very satisfactory; all third class candidates have been excluded and only those who have done well in the preliminary qualifying or higher examination are taken, and they do very well indeed. So it is not so much the question of I.Sc. or Matriculation as of the inherent standard of intelligence and capacity for work and grasping things of a candidate, that matters. Select your candidates, whether I. Sc. or Matriculates, wisely on merit and you or they will never repent.

With regard to the proposal to extend the curriculum from 4 to 5 years let me quote what I said on another occasion about 3 years ago. "Opinion has been expressed in certain quarters that it (curriculum) should be raised to five (years), but its advocates have failed to make out a case for this change and to show how it would improve the prospects of the medical Licentiates. The sole aim of medical schools in India is to turn out general medical practitioners—not specialists—who, besides supplying from amongst their ranks Sub-Assistant Surgeons for the civil and military departments of the State might know how to deal with the ordinary run of practice, be competent in its common emergencies, not make gross mistakes, know when to need to seek assistance and be instrumental in providing cheap ordinary medical aid to the poor masses. That the schools have succeeded in achieving this object needs no proof—medical subjects are fast growing in number and bulk, and varying courses of studies are prescribed in different countries to meet the situation, but no unanimity has been, or is likely to be arrived at on the question "what should be the minimum period of studies in medical institutions". The whole question has been beautifully summed up by a leading medical journal (the Lancet) in the following words: "The curriculum grows longer and longer and yet there seems to be no more time than there used to be for all that is judged to be necessary for the student's salvation and no time at all for the leisure he needs to "walk with God" (as a Spaniard would say) and educate himself. Discussions on how to use the years to the best advantage go on without end, all sorts of plan are proposed, there seem to be as many perfect routes to qualification as there are cures for rheumatism. To define the minimum which is "necessary" is as impossible as it is to draw a sharp line between quackery and respectability".

Talking about the danger of specialisation PROFESSOR BARCLAY of the University of Cambridge has said "why should the student learn

masses of detail, which seem to have no practical application, not only in Physiology and Anatomy but in every subject? Why should we tempt providence by making all learn the technique of surgical operations which only a few will ever have the skill or experience to perform efficiently, the detail of chemical, bacteriological, and other technique only a fraction of which they can possibly use? Each specialist is trying to teach as much as possible of his own subject to men who, in nine cases out of ten will neither have the opportunity nor the wish to practise that particular specialty. For that one man in ten the teaching is too little to be of real value; for the other nine, it is just so much detail to cram up for examinations. I believe that the medical student could be adequately prepared for his life's work in a far shorter period". This is his opinion about the length of course of studies in Great Britian, and yet our Licentiates want the course of their studies in medical schools to be lengthened by one year. In some provinces *e. g.* Bombay, it has been raised to five years, but it offers no material advantage, for the qualification acquired after it remains—and must remain—unrecognised by our universities, by the All-India Medical Council in embryo, and by the medical universities and councils abroad. The only superiority of the 5 years' course in Bombay is that it makes provision for the teaching of elementary Botany and Zoology, but that in my opinion is not a *sine qua non* for the Licentiates' course. These subjects are important from the point of view of comparative study of medical sciences and research only, but a Licentiate is not meant to be a natural scientist or a research worker. Those who say that a good knowledge of Botany is essential to grasp thoroughly the intricacies of Materia Medica forget that now-a-days we teach and talk of Pharmacology and are not living in the good old days when Materia Medica was taught in terms of Botany. Even to candidates for higher qualifications nothing more than the most elementary principles of the subject need be taught. MR. SOMERVILLE HASTINGS writes in this connection: "The human body differs so markedly from a cabbage that I fail to see what good purpose is served by teaching a medical student any thing more than the most elementary principles of Botany." So far as the teaching of actual medical subjects goes the standard of the Bombay qulification hardly comes upto that of the Punjab qualification; it certainly is not superior to it.

I have often heard Licentiates and others talk of "half-baked knowledge," "proper training," "ill-equipped" and "ill-trained" doctors, and so on, yet *none* of the many whom I have asked to define these terms has been able to do so. In the Amritsar School the length of the curriculum is four years and four months out of which 2½ year s are devoted to the teaching of senior subjects and clinical practice against 5 and 3 years respectively in medical colleges. If the actual number of working hours was counted I am sure it will compare very favourably with that in any medical college in the country. May I then ask whether the little difference that there is is so great as to make the training imparted in the Amritsar School (and I trust in the other schools also) as "half-baked knowledge" and the recipients of it as "ill-equipped" and "ill-trained" doctors? I am sure every fair minded person will give the answer in the negative.

DR. A. D. MUKERJEE is of the opinion that the result of 4 years' course is that some important branches of the medical science are not taught at all in our schools and some are very perfunctorily taught. Further on he says that because the Licentiates are meant to settle and practise in rural areas it is necessary to equip them with proper training so that they may successfully tackle the problems of the countryside which are much more complicated than the problems in the city, and he hopes that it is not contended that because the villages are poor, they should be provided with ill-equipped and ill-trained doctors. To these remarks of his he will find an effective answer—if he is open minded—in what I have said above, and in Professor BARCLAY'S opinion and in the quotation from the Lancet which I have cited in the preceding paragraphs. A Lincentiate is meant to be a general practitioner and to deal with the ordinary run of practice. It is not contended, nor is it possible, that he should be a self-contained specialist, and fitted with the equipment of a specialist, in every branch of medical science in a village. What is possible and desirable is that he should be competent in the common emergencies of rural practice and to know when to need to seek assistance. For this I can say without any fear of contradiction that he is well fitted, well equipped, well-qualified, properly trained and whole-baked. It is my experience—and of others also—that in ordinary general practice, whether in a city or in a village, an average Licentiate fares as well as an average Graduate. If I find him wanting in anything it is not the school training but the keenness to keep his knowledge upto date, coupled, of course, with lack of facilities for post-graduate training. Even he who is in service and comes up periodically for his grade examinations is lamentably backward in this respect. From seven years' experience of men in service I can say that an average Licentiate when he comes up for his grade examinations knows less than he did when he was a final year student a few years before. About Graduates I can speak less dogmatically, but my impression is that they are comparatively better in this respect. As regards material

equipment it has to be remembered that in these days of specialisation it has to be concentrated in towns and in bigger hospitals even in the West, not to say of the East.

Then, the financial aspect of the question has to be considered. Those who join the Licentiate class are the sons of very poor parents—mostly villagers—who can ill afford to give them higher education. At present such men with small means can obtain at a comparatively small cost, in four years' time, a qualification to practise medicine and surgery and gain a livelihood. To compel them to enter first a science college for 2 years' study, and then to undergo a 5 years' course in a medical school, in other words to study for 7 years instead of 4, and to spend proportionately more money, would involve an immense amount of hardship on them and would tell very heavily on fathers of small means who look forward to finding a profession for their sons for which it is in their power to arrange. It would also necessarily mean a most serious reduction in the number of qualified practitioners throughout the country, which it should be the aim of the State and the public to encourage, and would withhold the privileges of scientific methods of treatment from a vast number of people.

Facilities for higher qualification.

Let us now take up the question of facilities for "the more aspiring of the class to come up for higher medical degrees". In this I am one with the profession in general and the Licentiates in particular, and I have made no secret of my sympathies with those who are directly concerned with it. Such facilities ought to be provided by our universities, and we ought to agitate for them. They should follow the noble example of the Examining Board in England of the Royal College of Physicians and the Royal College of Surgeons and admit Licentiates to their Examinations for medical degrees under more or less similar conditions as have been laid down by the English Board for admission to the Examinations for the L.R.C.P., M.R.C.S. These conditions are :—

1. "A candidate holding a License in India, obtained after training in a medical school—whether he has completed 4 or 5 years' curriculum—is required.

(*a*) To pass a recognised Preliminary Examination in General Education in accordance with the Regulations of the Examining Board in England.

(*b*) To pass the First Professional Examination in Anatomy, Physiology, Materia Medica, and Pharmacology.

(*c*) To complete two years (twenty-four months) Medical and Surgical practice in a recognised medical school and Hospital in this country (*i. e.* England) after passing Section I of the First Professional Examination. Admission to one subject of the Final Examination is allowed after eighteen months of such practice."

Incidentally, it is worth noting that the Examining Board makes no distinction between 4 and 5 years' curriculum in Indian Medical Schools. So the cry for 5 years' course from this point of view also is meaningless.

The above conditions could be modified, without much difficulty, to meet the requirements of our universities. CAPTAIN P. B. MUKERJEE suggests that the Licentiates might be allowed to go up for the M.B. or M.B., B.S., degree after undergoing a course of training for 3 or 4 years. This is rather vague. The Licentiates themselves have not come forward with any definite proposal, extensive agitation and vast propaganda notwithstanding. Under these circumstances I rather hesitate to make a suggestion, but realising that some one must break the ice I venture to do so. In my opinion, a Licentiate, whether he has completed 4 or 5 years' curriculum in a recognised medical school in India should be admitted to the Final Professional Examination for the degree of M.B., B.S., or its equivalent, of a recognised university provided : (*a*) He has passed not less than two academic years (1 year ?) previously for a recognised Examination from a recognised college in Chemistry, Physics and Biology in accordance with the Regulations of a recognised Indian university for the F. Sc. Medical Group, or its equivalent ; (*b*) Has completed two academic years' medical and surgical Hospital Practice and training in Pathology, Medicine, Surgery, Diseases of Eye, Ear, Nose and Throat and Midwifery and Gynaecology in a recognised medical college and Hospital in India and (*c*) Takes up Pathology as a subject for the Examination, whether separately or together with the subjects for the Final Professional Examination for the M.B., B.S., degree, or its equivalent, in accordance with the Regulations of a recognised university.

In proposing this I have left out English from F. Sc. examination, because although a Licentitae after passing the Matriculation does not study classical prose and poetry, yet during the course of his studies in a medical school he gathers enough working knowledge of the language and does not lag behind an F.Sc., in that respect. I have also not insisted on an examination in Anatomy, Physiology, Materia Medica, Hygiene and Forensic Medicine, because these subjects, with the possible exception of Physiology so far as it relates to electrical experimental Physiology, are taught almost, if not quite upto the degree standard, and even

if there was any appreciable difference in any of these subjects, it could be easily levelled up in medical schools. This proposal, I think, should satisfy both the parties—the universities and the Licentiates—and is worthy of serious consideration.

I am afraid, I have taken too much of space. When I started writing this paper I never thought that it will become so lengthy, but as I went on idea after idea came into my mind, and as one looked as important as the other I could not leave out any. I do not profess to have made a special study of the subject, but being connected with medical education in the Punjab, first for over five years as a Professor at the King Edward Medical College, Lahore, and now for more than six years as Principal, Medical School, Amritsar, I could not help forming some ideas of my own, and it is these ideas which I have presented in this paper.

Summary.

1. In India a lower medical qualification than the university degree is a necessity, at least for a long time to come.

2. Matriculation Certificate should be the minimum preliminary qualification for admission to medical schools.

3. It would be very advantageous if a "Matriculation Medical Group Certificate" qualification could be started like the F. Sc. Medical Group.

4. The minimum period of training in medical schools should be four calendar years.

5. If the preliminary qualification has to be the I. Sc. and the length of curriculum, 5 years, there is no sense in maintaining the medical schools and the diploma of Licentiateship; the former should be converted into colleges and the latter into a medical degree.

6. Indian universities should be asked to provide facilities to Licentiates to enable them to appear at their examinations for medical degrees granted by them under conditions suggested above in the text of this paper.

N. B.—Since writing this paper my attention has been drawn to certain conditions under which the Madras University admits licentiates to the M.B., B.S. degree examination but I refrain from making any comments on them —*A. C.*

The Indian Medical Council Bill

By K. S. RAY M.A., B.Sc., M.B., ch.B. (Edin.), Calcutta.

The importance of this measure lies in the fact that the future progress and well-being of the medical profession, medical services and medical education in India will be dependent on this Council.

Indian medical men approve of the formation of a medical council, and their opposition to the Bill would seem inexplicable until a careful scrutiny is made of its provisions. It will be found that the Bill has been cast on such lines as to defeat the real purpose of such a Council and the revised Bill makes no material advance on the former.

In the first place, the preamble to the old Bill circulated for opinion made it clear that the main object of the Bill was to win back the recognition of the British General Medical Council. Accordingly, the constitution of the Council was framed in such a way as to appeal to the General Medical Council—the official and I. M. S. elements were deliberately given predominence in representation and the independent medical practi tioners, who stand to be most affected, were allowed only meagre representation, while the Licentiates were granted neither representation nor registration. The President was to be nominated by the Governor-General-in-Council. In fact, out of a total of 28 members, only some 12 were to be elected, and even of the latter the provisions of the Bill practically ensured the return of quasi-official or official dominated representatives. This undoubtedly offered an ideal constitution from the point of view of the General Medical Council (who, by the way, in their own case would not accept a nominated President), for it reduced the independent practitioners to impotence and ensured the control of the I. M. S. Indeed, it is taken for granted that the Director-General of the Indian Medical Service would always be nominated President and with the other nominated representatives would carry all before him. In turn, his amenability to the G. M. C. could be depended upon, so that the real arbiters of medical policy and services in India, and also the fate of independent Indian medical practitioners, would be the G. M. C. through the I. M. S. The disguise was too thinly veiled to deceive anybody.

Indian medical men contend that the primary object of such a Council should be to control and improve medical education in the country, to maintain a high standard of medical ethics and

that it should be utilised to give medical men the privileges consequent on registration, such rights as immunity in law in certain cases, the right to recover fees etc. which medical men enjoy in other countries. The chief need in India is to establish a uniform standard of qualification in medicine, but the Bill treated medical education and the rights of medical men as merely incidental to the purpose of placating the G. M. C. Whereas the first need is to set our own house in order, the Bill neglects our own house to look abroad to Great Britain. Rightly, Indian medical men will not accept such a condition, for to do so would be to sell the birth-right of the Indian medical profession. While they certainly wish to see Indian medical degrees recognised by foreign countries, including the British General Medical Council and are also willing to recognise their medical degrees, they are not willing to sacrifice the interests of Indian medical education and the privileges of Indian medical men on the altar of the General Medical Council. The Bill, in fact, went so far as to make the recognition of British medical degrees in India a *sine qua non* to its enactment, without any corresponding assurance of recognition of Indian medical degrees by the G. M. C. The Indian medical men stand solidly for reciprocal treatment, but they stand even before that for the rights and privileges of their profession in their own country.

One of the reasons advanced for not granting representation to Licentiates on the Council and for keeping them out of the All-India Medical Register was that their inclusion would preclude the recognition of Indian medical degrees by the G. M. C., since the standard of the Licentiates was considered to be too low. This attitude is certainly in keeping with the Government's intention to placate the G. M. C. at all costs but it is certainly not in keeping with the real purpose of a Medical Council, and it is useful to recall that the British Medical Act gave registration to all practitioners, even dentists, from its very inception. The Licentiates form the largest medical element in the country, in the closest touch with the people. They have for long clamoured for improvement of their education and status and to deny them representation and registration would be to retain them at the tender mercies of the Provincial Councils of Medical Registration, wherein the official element repulses all their efforts at advancement. Their exclusion from the privileges would be not merely a crime, but it would introduce and perpetuate an invidious sectionalism between graduates and licentiates, between whom Government would succeed in driving a wedge to the interests of neither.

Contemplation of these issues leads inevitably to the conclusion that the Bill merits only one fate, namely total rejection at the hands of the Assembly. We want Medical Swaraj as much as any other Swaraj. Rather than place on India such an infliction as this Bill contemplates we would await the decision of wider constitutional issues. As a matter of fact, we have done without an Indian Medical Council so long that the delay of another couple of years or so would make little difference. The heavens that were expected to fall upon withdrawal of the G. M. C.'s recognition of Indian medical degrees have not done so and will not do so. To say that the interests of Indian medical practitioners abroad are thereby jeopardised is not true and in any case the interests of a handful of practitioners abroad must not be allowed to vitiate the interests of thousands at home in our own country. The only reason for hastening the Bill through the Assembly will be found in the desire to secure its passage before any new constitutional reforms are introduced, so that the position of the General Medical Council and I. M. S. elements might be safeguarded while large autocratic powers still rest in British hands. But Government should be warned of the reaction that would follow upon the enactment of so grossly unpopular a measure.

Having regard, however, to constitutional developments, we think the time is singularly inopportune for the passing of such a Bill. For a long time the idea of a central controlling agency was held up by provincial ministers, so zealous of their provincial powers that they resented any hint of infringement. With a larger measure of provincial autonomy in the future, they are likely to be even less amenable to the suggestion, but in any case things are so much in the air at present that it is impossible to say how a Medical Council formed now would stand to be affected, financially or otherwise, by constitutional changes. That being so, the wisest course would be to postpone consideration until constitutional and political issues are settled. It would not do to pass an Act to-day, which in a short time may have to be seriously overhauled. As we have said before, this little further delay would cause no inconvenience or harm. It would on the other hand be a decided gain.

So far as the I. M. S. are concerned, Indian medical education has been in their hands over the last eighty years and it speaks volumes against them, if, as a result of their efforts over this long period, the General Medical Council find themselves unable to recognise Indian medical degrees. On their record one could hardly recommend that important interests such as Indian medical education and policy should continue in the control of the I. M. S. and it is high time that Indians were afforded a chance of proving themselves where the I. M. S. have failed.

Medical News and Notes

[Items of news and notes of general interest to the profession for incorporation in this section from the members of the profession will be greatly appreciated—EDITOR]

Medical Inspection of Madras Schools. The Government are advised that the existing system of medical inspection of pupils in elementary and secondary schools is not producing results of sufficient practical value to justify its continuance during the present financial stringency. They, therefore, direct in supersession of the orders in Memorandum No. 1269/C-5, dated 30th November 1931, that no grant be paid to local bodies or private managements towards the cost of the medical inspection of pupils in their schools so long as the financial stringency lasts. As a corollary, the system of medical inspection in Government elementary and secondary schools should also be discontinued.

The Director is informed that the foregoing orders do not prevent the payment of grant on account of inspections already conducted.

* * * * *

Madras Hospitals to Charge Expensive Drugs. The Madras Government have considered the question of recovering the cost of expensive drugs from both the in and out-patients treated in Government hospitals and have decided that the cost of all expensive drugs used in the treatment of well-to-do patients other than Government servants, be recovered from the patients. The Superintendents or Medical Officers in charge of hospitals have been allowed discretion to remit in part or in full the cost of the drugs in individual cases for special reasons to be recorded in writing. Persons with an income exceeding Rs. 100 per mensem have been classed as well-to-do and drugs costing Rs. 2 or more per dose and those specified in the list are to be considered as expensive drugs. A list of 36 special or expensive drugs has been given which includes, thyroid tablets, parathyroid tablets, sera and vaccines.

* * * * *

Centre for Anti-Rabic Treatment in Bengal. At a recent meeting of the members of the District Board and Municipality, Dacca, resolutions were unanimously adopted asking the Government to take immediate steps for starting anti-rabic treatment in the Mitford Hospital. It is understood that doctors attached to the Hospital have agreed to undertake this additional work in the interest of the people of Dacca. The Government, it is pointed out, will also be able to make considerable savings in respect of passage expenses paid to destitute persons for travelling from Dacca to Calcutta and back for treatment. The District Board and the Municipality will pay the expenses of bringing anti-rabic vaccine from Calcutta.

* * * * *

Another Hospital in Bombay. The Crescent Free Hospital, Bombay, which was started at Memonwada Road during the recent communal riots primarily through the efforts of DR. G. A. SHAIDH, Medical Officer in Charge, has treated 430 persons so far. These included a few cases of bullet and bayonet wounds. The Hospital authorities have expressed their view that it should be made a permanent institution. DR. W. NUNAN, one of the early visitors, testified to the good work being done by the staff, all of whom are honorary.

* * * * *

Rights of "Quacks." Interesting references to the use of the terms "doctor" were made by the Recorder SIR ERNEST WILD during an Old Bailey trial of an unregistered medical practitioner who was acquitted of the charge of obtaining money by false pretences with intent to defraud and was discharged. SIR ERNEST said that the medical profession had no monopoly of the art of healing. It could not merely say "quack" to a man and rule him beyond the pale of healing the universe, though it might like to do so. There were plenty of unqualified men like SIR HERBERT BARKER who survived with great success the dislike of the medical profession. There were osteopaths and others who professed the art of healing in various directions who had as much right to treat patients as a qualified doctor so long as the public knew whom they were dealing with.

* * * * *

A Doctor's View on Birth Control. SIR THOMAS HORDER, Physician-in-Ordinary to the Prince of Wales, speaking recently at the first annual meeting of the National Birth Control Association, of which he has just been elected President, urged that the medical profession should bring to the knowledge of married women of all classes rational knowledge of birth control.

"Indiscriminate child-bearing" he said, "is a disease of the body politic" and you must convince society that this disease exists in its midst and that it wishes to be cured. The problem demands as much scientific attention as cancer and tuberculosis, two of the worst scourges of humanity.

"Have we a remedy in such form that it can be taught to medical students and practised by

doctors? I am not yet satisfied that we have, but neither have we a cure for cancer or tuberculosis.

"There is, in my view, a close analogy between these diseases and unrestricted child-bearing. We can not afford to wait until the disease can be cured."

* * * * *

Judge on Birth Control. Passing sentence on LILY SCRUTON aged 48, of Sheffield, who had pleaded guilty to the manslaughter of a young married woman and to an attempt to procure abortion, MR. JUSTICE MCCARDIE said: "It is quite clear even at the time when you made the attempt that the woman was already suffering from grave physical trouble, but for that trouble she would not have died. You are technically guilty of manslaughter. You have also admitted an offence against the present law of abortion. In the first place you were charged with wilful murder. The very last thing that you desired was the death of the woman at whose request you acted, and yet a charge of wilful murder was made against you".

"Such a charge illustrates in my opinion the ignorance and brutality with which the law of abortion is too often administered, and it is plain to me that many of those who up-hold the present law of abortion are wholly ignorant of the grave social problems which not only beset but menace the nation at the present time. In this case the now dead woman did not wish for another child. She already had three children of the ages of six, five, and three years. The husband did want, but it was the wife who had to undergo the burden and the fear of child-bearing. I repeat once more this case illustrates the need for a far wider extension of birth control knowledge than at present exists. I cannot think it right a woman should be forced to have a child against her will. I am glad that in the present case the jury threw out the charge of wilful murder, and I hope that the era of savagery in connection with these cases is drawing to an end.

"I recognise the force of your counsel's words, that for five months you have been lying in the prison under this charge of wilful murder. No bail was allowed. I am told by the learned counsel of the Crown that you have practised abortion upon other women, and he gave me the figures you charged *ie.*, 4*s.* 6*d* and 5*s.* 6*d*. They are very significant figures in connection with the social problem I have referred to. They show that upon your part there was no attempt whatever at extortion or blackmail. In this case, having regard to the fact that you have already spent five months in prison and having regard to the charge of wilful murder, a wholly unfounded charge from a moral point of view, I shall sentence you to a further period of seven months' imprisonment."

MR. JUSTICE MCCARDIE'S utterances on birth-control and abortion are arousing considerable controversy and evoking protests in religious circles.

He further condemned the existing law at Leeds assizes expressing the hope that the present era of savagery was drawing to a close.

Various orthodox societies, including the Catholic Doctors' League, have sent resolutions to the Prime Minister, LORD SANKEY and the Home Secretary, viewing with abhorrence and alarm these pronouncements from the bench and protesting against His Majesty's Courts of Justice being used for the propagation of immoral doctrines.

A Clinical Record of Cases of Ankylostomiasis

By DURGA RANJAN MUKHERJI, M.B.,
Late House Medical Officer, Sambhunath Pandit Hospital, Calcutta.

In addition to the common signs and symptoms of ankylostomiasis, the following clinical features which have been observed by me, during my tenure (1928-30) of office as House Medical Officer at the Sambhunath Pandit Hospital, are described below:

I. *Pain in the abdomen.* A vague constant pain in the upper part of the abdomen, mostly referred to the epigastric region but may also be referred to the umbilicus or around it. Only 12 out of 60 cases of ankylostomiasis had this sort of pain. The pain may occasionally aggravate and resemble an acute attack of abdominal colic (4 cases). It has no relation to food and is usually not associated with vomiting or rigidity of the abdominal muscles and there is no radiation of pain. Food alkalies and purgatives can not relieve this pain but in one case pain was

returned by pressure over the epigastrium. Two cases were rather more interesting. Of them, one had evidence of acute intestinal obstruction and the other resembled a case of acute appendicitis.

II. *Pigmentation of the tongue.* Present in 10 cases. Oblong or circular bluish black pigmentations measuring about ¼ × ⅛ or ¼ diameter, were seen on the dorsum of the tongue, in its anterior one third, close to the lateral margins. The pigmentations were prominent in 3 cases of ankylostomiasis with Kala-azar, in advanced stages of anaemia. The patches seem to be characteristic of ankylostomiasis as they have not been seen in any other disease and quickly disappear with the administration of specific anthelmintics.

III. *Blood in Stool.* Blood is passed in stools, in a certain number of cases of ankylostomiasis either as pure fresh blood (6 cases) as from bleeding piles, or with clots (2 cases) without traces of foecal material in it. Washed meat like stools were passed by 6 cases of ankylostomiasis without any other clinical features of acute bacillary dysentery or haemorrhagic type of cholera. Character of stools in ankylostomiasis, haemorrhagic type of cholera and in acute bacillary dysentery may be the same. Only ankylostoma ova were found in the stools of these six cases. Out of 36 cases of typical acute bacillary dysentery only 2 cases had ankylostoma ova in their stools. Out of 49 cases of typical acute and chronic amoebic dysentery 4 cases had ankylostoma ova along with entamoeba histolytica in their stools. One patient had choleraic rice-watery stools without any other clinical features of cholera. Ankylostoma ova were found in his stools but no comma bacilli.

The three clinical features noted above are seen at a late stage of the disease and as such are associated with flabby, pale-white tongue, muddy conjunctiva, mental and physical weakness and good appetite with desire for unusual types of food. The anaemia may advance to an extreme degree and puffy face, oedema of feet, dilatation of the heart, albuminuria (in one case only) without cast, enlarged liver and spleen and ascites (in one case only) have been noted. Haemoglobin value and red blood corpuscles decrease with increase of eosinophiles in the blood. The colour index is not always low. As a result of weakness defective vision and hearing have been complained of by patients. Loud gargling sounds in abdomen have been heard in some cases. Wasting of body, tuberculosis, asthma or nervous diseases have not been seen to be associated with ankylostomiasis. Appetite being good and bowels being regular main complaint of many patients have been weakness only. It is peculiar that melaena has not been seen in any of the cases in the series.

Atypical cases of ankylostomiasis can be readily distinguished from other acute bowel diseases by the following features of ankylostomiasis ; the face is puffy, the tongue flabby, moist, clean and pale-white, axillary temperature close to normal, the pulse tension fair, the specific gravity of the blood normal, and the rectal temperature is not more than a degree higher than axillary temperature. Certain negative features are also important : they are absence of vomiting, cramps of extremities, washer-woman's fingers, suppression of urine, griping pain, tenesmus, mucus in stools, high or subnormal temperature, coated or dry tongue, and absence of pinched or tonic facies. As acute bowel disorders of this nature may be due to causes other than those that could be briefly touched upon here, the patient should be carefully watched for successive development of clinical features, as the course of the diseases greatly helps to arrive at a correct diagnosis. As a single microscopic examination of the stool, in these acute stages, reveals ankylostoma ova, when present, the stools should always be examined in doubtful cases.

TREATMENT.

Below is described in detail the treatment adopted, the dose for an adult patient being given. It is safe, simple and cheap.

Half an ounce of saturated solution of Magnesium Sulphate is given per mouth in an empty stomach at 6 A. M.

Half a drachm of Carbon tetrachloride is given per mouth at 7 A. M., with about an ounce of milk.

An ounce of saturated solution of Magnesium Sulphate is given per mouth at 8-30 A. M.

No food is allowed to the patient till 10 A. M. The treatment is repeated twice a week for 2 to 3 weeks. In pure cases of ankylostomiasis improvement is invariably noticed after the administration of the first dose of Carbon tetrachlor. Morphine combined with Atropine was injected, in abdominal colic to relieve pain. For secondary anaemia, Iron and Arsenic, for dilatation of the heart, Extract Arjun Liquid or Digitalis, for albuminuria, Diuretin, Liq. Ferri Acetas were prescribed. Specific treatment was given for associated diseases, Emetine for amoebic dysentery, Sulphates and Serum for bacillary dysentery. It is advisable to withhold the administration of Carbon tetrachlor in acute toxaemic stage of bacillary dysentery. Calcium, Serum, Emetine, Morphia and intestinal astringents have no effect on haemorrhagic stools of ankylostomiasis. It is readily controlled by Carbon tetrachloride treatment.

My best thanks are due to Lt. Col. A. Denham-White I. M. S. for his visit to these interesting cases, and encouragement for publication of this record.

Case Notes

A Case of Big Ovarian Cyst with Twisted Pedicle.

Dr. J. C. Chatterjee.
Calcutta Medical School Hospital, Calcutta.

Patient—F. Age 25. M. F. was admitted in the gynaecological side of the Calcutta Medical School Hospital for the treatment of the following complaints:

Before operation.

(1) An irregular swelling occupying the whole of the abdomen.

(2) Dyspnoea.

(3) Amenorrhoea for one year.

Past History. About 2½ years back the patient experienced a sense of heaviness with slight pain and rigidity in the lower abdomen. As the case progressed, she noticed an irregular lump in the lower abdomen which was increasing day by day with gradual increase of pain. This was followed after one year by stoppage of menstruation and dyspnoea.

Obstetrical History. The patient is a multipara and has two children. There is no history of difficult labour.

Menstrual History. First period at the age of 13 years, regular every 30 days and lasting for 4 days, without any pain. There is amenorrhoea for about a year.

Physical Examination :

Inspection of the abdomen showed a huge swelling with irregular outline and protruded umbilicus. Superficial veins were visible. There was a depression mainly from side to side over the lump above the umbilicus.

Palpation. An irregular lump was felt occupying the whole of the abdomen and reaching as far as 2 fingers below the ensiform cartilage. The lump was cystic in nature and a thrill could be elicited. The whole mass could be made to

move from side to side. Liver and spleen could not be definitely made out.

Percussion. The whole mass was dull on percussion at the centre as well as over the flanks and was not continuous with liver dullness. Shifting dullness was absent.

Measurement of Abdomen :

Circumference at the level of umbilicus	—39″
Circumference at the level of ensiform cartilage	—32″
Umbilicus to symphysis pubis	—11″
Umbilicus to ensiform cartilage	—8¼″

Vaginal Examination :

Vaginal outlet—normal.
Uterus—outline could not be made out.
Cuis—clear.
Cervix—pushed down, very small, discolouration present.

Alimentary System. Bowels clear ; appetite good : teeth and gums healthy. Liver and spleen could not be palpated.

Circulatory System. Apex beat was on the left 4th interspace about 3″ from the midsternal line. Pulse 84 per minute.

Blood Report—

Hb—70 p.c.	R.B.C—3,636,000
Poly—80 p.c.	W.B.C— 11,880
Lymphocytes—16 p. c.	
L. M.—nil	
Eosinophile—nil	

Respiratory System. Slight difficulty in breathing when the patient was lying on her back. There was some uncomfortable feeling due to the size of the abdomen.

Respiration—24 per minute.

Urinary System. Nothing abnormal.

Urine Report— Sp. Gravity—1008
Reaction—alkaline
Sugar } nil
Albumin }
Microscopical Examination—
Triple phosphate—present.
Bacteria—a few present.

Laparatomy was done about 24 days after admission. Abdomen opened by right paramedian incision 7″ long. The recti were very thin and hence the peritoneal cavity was opened very easily. On opening the cavity a huge cyst was brought into view. The cyst was then punctured with a knife and a large amount of straw coloured fluid (about 16 lbs.) was let out by means of an ovarian trocar. The cyst had a pedicle which was twisted and was connected with the left ovary, this was clamped and transfixed. There was no adhesion, but the cyst occupied every possible space in the abdominal cavity displacing the omentum and intestines. The entire cyst was removed *en masse*. Right ovary, appendix and gall bladder were healthy. The abdomen was closed by layer

After operation.

suture. The peculiarity is that though the patient had a twisted ovarian cyst, she did not develop any symptom of the pedicle being twisted.

The patient left the hospital cured about a month after the operation.

A Case of Hypertrophied Clitoris and Undeveloped Sex Organs.

By Dr J. C. CHATTERJEE,

Calcutta Medical School Hospital, Calcutta.

A married girl aged 15 was brought to me for treatment of the following :

1. A projection at the site of the clitoris about 2½″ long with erectile tissues causing erection during manipulation and during sexual excitement.

2. No development of breasts or appearance of any secondary sexual characteristics.

3. Non-appearance of menstruation.

She was brought up like a female and was married at the age of 13, but the non-appearance of menstruation and the non-development of the secondary sexual characteristics made the guardians anxious.

Physical Examination :

Inspection of the whole body gives the idea of a male. The pectoral area is just like a male with no growth of the mammary glands.

The clitoris is hypertrophied looking like a penis with exposed glands about one and a half inch long which is sensitive to external stimulation and increases to 2" when stimulated. No urethral opening in it.

The urethra is situated in its normal place, the vagina is capacious and normal in size. *Uterus* felt like a small nodule with a dimple in its centre at the site of external os through which the sound can be passed for about ½ an inch. The ovaries cannot be felt, apparently they are not developed.

The vulva and vagina have got the appearance of a female.

As the patient's main complaint was the erection of the hypertrophied clitoris during sexual connection she requested me to remove it.

The patient was again examined under chloroform and the uterus was felt like a nodule and undeveloped. No ovary could be felt on bimanual examination. The clitoris was amputated and the patient left the hospital with the external appearance of the vagina like that of a female with only a slight nodule at the site of clitoris.

This case was shown to COL. V. B. GREEN ARMYTAGE and to some of the students of the Medical College, Calcutta, and the Calcutta Medical School. Such a big clitoris was not seen by COL. ARMYTAGE or myself before.

Association Notes

Central Council.

A meeting of the Central Council of the Indian Medical Association was held at the Head Office, 67 Dharmatala Street, Calcutta, on the 13th August, at which RAI BAHADUR DR. HARINATH GHOSE, M.D., presided.

The following are a few of the items that were gone through.

The alterations recommended by the Rules Sub-Committee were adopted with few modifications.

The Journal Committee for the year 1932-33 was appointed as follows :

Editor—SIR NILRATAN SIRCAR.
Business Manager—DR. AGHORE NATH GHOSH.

Members :

DR. H. GHOSH,
„ A. C. UKIL,
„ J. N. DUTT,
„ S. K. SEN,
DR. K. C. CHOUDHURY,
„ J. C. BANERJI,
„ N. N. BASU,
„ K. S. RAY,
Jt. Secretary, (ex. Officio).

Collaborators from Provinces :

DR. C. A. AMESUR, (Karachi).
DR. DR. SARDATE, (Jubblepur).

The election of the following gentlemen by the Branches as representatives to the Central Council for the year 1932-33 was recorded :—

Patna : CAPT. P. B. MUKERJI, DR. HYDER ALI KHAN.
Poona : DR. V. C. GOKHALE, „ R. K. NAIDU.
Delhi : DR. G. N. KHANNA.
Gujranwala : DR. HANSRAJ.

With regard to the venue for the 9th All-India Medical Conference, the Secretary reported that the invitation extended by the Patna Medical Association to hold the next conference there has since been withdrawn.

The Secretary reported that it has been suggested that the 9th All-India Medical Conference be held either at Delhi or Lucknow.

It was resolved that the Secretaries be authorised to communicate with the Secretaries of these branches and to finally select one of these two places.

Regarding nomination for Presidentship for the next year, the Secretary reported that notice was given under Rule 20 to the different branches and the following names have so far been received for the Presidentship :—

COL. BHOLA NAUTH,
MAJOR M. G. NAIDU,
COL. C. R. BAKHLEY,
DR. ANSARI,
„ DESHMUKH,
„ B. C. ROY.

Resolved that the Secretaries be authorised to circulate these names and other names which might be received from other branches to all the branches for their nominations and asking for an early reply.

The Secretary reported that since the last meeting, branches of the Indian Medical Association have been opened at Madras, Delhi and Lucknow.

The following resolution was passed :

This Association is emphatically of the opinion that the Indian Medical Council Bill which was introduced by SIR FRANK NOYCE in the Indian Legislative Assembly on the 23rd March 1932, is wholly unacceptable to the Indian Medical Profession in as much as its provisions run directly opposite to the views that were expressed by the various independent medical associations and bodies in the country

to which the draft Bill was circulated for opinion. The Association, therefore, strongly disapproves of the Bill for its various reactionary provisions, the chief amongst which are the following :—

1. The President remains a nominated person.
2. Each Provincial Government nominates one member.
3. Each Medical Faculty, and not the Senate, elects one member.
4. Each Provincial Medical Council (or Committee) elects one member.
5. The Medical Graduates are not given a direct representation on the Council.
6. The Licentiates as a class have been excluded from the Register.
7. The question of reciprocity has been deliberately ignored : the British Register is to be recognised for ever without any guarantee that the Indian Medical Register will be recognised.
8. The Council is ignored in all important matters and the Executive Committee is made the supreme authority for all practical purposes.
9. The Patna University is not included in the First Schedule.

That this Association appeals to the members of the Indian Legislative Assembly and the Council of State to reject and throw out the Bill on its very introduction for the first reading.

Lahore Branch.

LECTURE ON HEART-FAILURE.

At a meeting of the Lahore Branch of the Indian Medical Association held in April last COL. D. H. RAI, M.R.C.P., I.M.S. delivered a lecture on "Heart failure" in course of which he dealt briefly with the anatomy of the heart, and pointed out that the heart was a "pump of the body, and contracted rhythmically. The impulse of contraction," he continued "starting at sino-auricular junction is spread through the auricular tissue to auriculo-ventricular node and from this node on to a strand of tissue called bundle of His. The bundle of His divided into its right and left bundle branches at the upper border of interventricular septum ; branches of these bundles in this tissue carries the impulse to Purkinje's system of fibres which terminates in the muscle fibres of right and left ventricles. The rhythmic contraction of the heart though inherent in the muscle fibres of the heart is controlled by the vagus and sympathetic nerves the former being the inhibitory, while the latter acceleratory in action."

Attention was next drawn to the respiration and exercise in maintaining the circulation.

"As long as the pump of the body is in healthy condition, it seldom fails under ordinary conditions, and it should be kept in view that the heart never works with its full reserve of strength. It has tremendous reserve power to meet the demand of extra strain. The heart begins to fail on degeneration of its muscle fibre and the degenerative process may be slow and insidious. The most important causes of the deterioration of heart muscle are diabetes, syphilis, and malaria. Rheumatic heart trouble is common, but although rheumatic heart is common in the West it is not so often found in the Punjab. Another very important cause is the focal sepsis from teeth and tonsils and the chronic inflammation of gall-bladder (cholecystitis) must always be kept in mind. High blood pressure following the kidney diseases or arterio-sclerosis exacts its own toll on the heart.

"Heart may fail suddenly without any warning and the patient may die. It may show symptoms pointing to impairment of cardiac efficiency. On routine examination one may find that the patient is easily exhausted, suffers from shortness of breath, complains of dyspepsia, does not sleep well of late and a slight oedema of the feet may be noticed after a day's work. Examination of the heart may show some hypertrophy and dilation. Heart sounds are feeble and distant. Pulse about 80 or so and on careful examination he may show additional signs which leads one to suspect that heart muscle has degenerated. He may show fibrillation of auricles. He may have pulsus alternans, there may be some defect in the conduction system of his heart. He may complain of cardiac pain. This may be slight oppression, slight discomfort, or it may be so severe that the patient is in agony.

"In *anginal attack* the patient has sharp pain in the heart region. There is a sense of constriction, the pain is localised to pre-cordial region. From the heart region, the pain is generally reflected down to the inner side of the left arm, neck or shoulder or even to some distant abdominal organ like the appendix.

"Another kind of pain which is more common than the true anginal pain in the Punjab was due to the fact that in some way circulation to the heart was interfered with, one of the coronary arteries, most commonly the left coronary artery, gets occluded. The obstruction leads to the infarcts of the heart, and the patient suffers from severe heart pain. This pain is persistent. It does not pass off rapidly like the anginal pain. The appearance of the patient is characteristic. He is very restless, often raving mad, pale in the face etc. On examination, his heart is found to be rapid, pulse feeble, blood pressure low, with moderately increased leucocytosis (15,000 to 20, 000). He shows slight rise in the temperature. This pain may persist for a long time and the attack may be repeated. This pain is not relieved by nitrities and only yields to morphia. All these above-mentioned symptoms are caused by the thrombosis of the coronary arteries which gradually become degenerated and get blocked, resulting in infarction of the heart."

The lecturer cited several cases of this type which he had seen in his practice and described cases which had suddenly died of heart failure.

"Heart failure may be a slow process, the patient complaining of shortness of breath, dyspnoea, swelling of the feet coming on gradually. With rest and treatment his symptoms may improve and if not properly managed, he may pass on to advanced congestive heart failure. In this case the patient may suffer from breathlessness, even at rest, he gets cyanosed, has troublesome cough, his feet and legs get swollen. His appetite is poor, bowels are constipated, stomach is distended, liver is enlarged. He may show generalised oedema, and there is fluid in the pleural cavity and the abdomen. Kidney function is impaired. Urine is of high specific gravity, albumin is present, but there is no urea retention. This congestive state may be brought about by valvular lesions and exophthalmic goitre may also be responsible for it in which case auricles may be fibrillating."

Referring to *treatment of heart failure* the speaker said that this depended on :

1. Capacity of the heart, how much strain it can bear. One has to protect it from unnecessary straining and increase its efficiency as a pump.
2. Regulation of the patient's habits. His activities have to be limited to the extent his damaged heart can bear : mental worries and physical strain are to be avoided. For the relief of pain in the thrombotic cases morphia gr. $\frac{1}{6}$ hypodermically is the best.

The value of Nitrites in certain types of cases and indications as to their use were given. The lecturer drew attention to drugs such as diuretin, glucose, etc. Regular excercise was recommended because it acted as tonic and nourishment if the heart improved. Role of rest in heart cases was thoroughly discussed and use of digitalis and management of sleeplessness was also taken up.

Discussion.

DR. VISHWA NATH said that he divided his cases of heart failure in two classes :

1. Those with normal rhythm
2. Those with abnormal rhythm.

He emphasised the importance of oedema of legs at the end of the day in the latter cases, and rest was very necessary in these. He agreed with the lecturer in the rarity of true anginal cases. He thought that cardiac infarction was often met with in the post-mortem room in some of these cases. Well-fed middle aged subjects often complain of post-sternal pains. He thought metabolic change was probably the cause of atheroma in these cases.

DR. NIHAL CHAND SIKRI also agreed with regard to the rarity of the true anginal cases. He thought that cases with infarction of the heart showed fever and leucocytosis. He maintained that most of these cases of cardiac failure were older in years, and they would not listen to, when asked to rest.

He divided his cases of Cardiac failure into two kinds—Dry and Wet. The latter he said could be treated profitably. Dry cases were hopeless. Wet cases were due to some disease in the heart itself. Dry cases were usually due to some disease, outside the heart, *e. g.*, Embolism of coronary arteries, poisons, focal sepsis, bad teeth and bad tonsils from early childhood. "In every one of these cases," he said, "the history from early childhood should lead you towards the cause. Emphysema is another cause for disease of the heart leading to failure. If you can cure focal sepsis, the patient lives longer. Cholecystitis is another cause. Obesity which has caused cardiac failure should come under over eating. The latter may be due to Bright's disease. Wet form is accompanied by regular rhythm." He said that he used very little Digitalis but emphasised the importance of treating the causal focus.

The Patna Medical Association.

(BEHAR BRANCH OF I. M. A.)

The following resolutions were passed at a monthly meeting of the Patna Medical Association :—

I. This Association is emphatically of the opinion that the Indian Medical Council Bill which was introduced by SIR FRANK NOYCE in the Indian Legislative Assembly on the 26th March, 1932, is wholly unacceptable to the Indian Medical Profession in as much as its provisions run directly opposite to the views that were expressed by the various independent Medical Associations and bodies in the country to which the draft Bill was circulated for opinion. The Association, therefore, strongly disapproves of the Bill for its various reactionary provisions the chief amongst which are the following ;

1. The President remains a nominated person.
2. Each Provincial Government nominates one member.
3. Each Medical Faculty, and not the Senate, elects one member.

4. Each Provincial Medical Council (or Committee) elects one member.
5. The Medical Graduates are not given a direct representation on the Council.
6. The Licentiates as a class have been excluded from the Register.
7. The question of reciprocity has been deliberately ignored ; the British Register is to be recognised for ever without any guarantee that the Indian Register will be so recognised.
8. The Council is ignored in all important matters and the Executive Committee is made the supreme authority for all practical purposes.
9. The Patna University is not included in the First Schedule.

II. This Association is further of opinion that if these and other objectionable features of the Bill are not removed and if the Bill is not amended on the lines suggested by the different Medical Associations and Societies of the Country, the Indian Medical profession will be amply justified in refusing to accept the Bill.

III. This Association appeals to the members of the Indian Legislative Assembly and the Council of State to reject and throw out the Bill on its very introduction for the First Reading as unacceptable to the profession, as an insult to its intelligence, as derogatory to its self-respect, and as fettering the profession in perpetuity with chains of slavery in place of conferring Medical Swaraj that was promised by SIR FRANK NOYCE and finally as trying to perpetuate for ever Grade and Caste distinction in the profession which should be abolished in the interest both of the public and of the Medical profession of India

Nagpur Branch.

The following resolutions were passed unanimously at the meeting of the Nagpur Branch of the Indian Medical Association held on 11th July 1932.

1. Resolved that the following Universities be requested to allow L. M. P. (C. P.) students having passed the Inter Science Examination of any University to appear for the M. B., B. S. Degree Examination within a period of two years as at present practised by the University of Madras and that copies of this resolution be sent to them.

Names of the Universities—

1. Bombay ; 2. Calcutta ; 3. Lucknow ; 4. Punjab.

2. Resolved that the Nagpur University be requested to be an examining body for the M. B., B. S. Degree Examination for L. M. P. (C. P.) students who have passed their Inter Science Examination and who undergo a training in Scientific Subjects for one year and clinical subjects for one year at the Robertson Medical School and the Mayo Hospital, Nagpur.

Lucknow Branch.

In response to an invitation issued by DRS. HUKKU and SWARUP a General Meeting of all the Medical Practitioners of Lucknow was held at the Balarampur Hospital on the 12th August 1932, when it was decided to start a branch of the Indian Medical Association in Lucknow. Service people also attended.

The following office-bearers and members of the Committee were duly elected for the current year.

President	...	DR. HUKKU,
Senior Vice-President	...	„ KOLAPUR,
Junior „ „	...	„ WILLIAMS,
Secretary	...	„ T. R. SWARUP,
Jt. Secretary and Librarian	...	„ K. K. ROY CHOWDHURY,
Auditor and Associated Editor for the Press	...	„ N. D. BANERJEE.

Members :

DR. J. P. MUDI, DR. R. LAL,
„ H. SAHAI, „ R. S. GUPTA,
DR. U. S. PANDAY.

Delhi Branch.

At a meeting of the medical practitioners held at Delhi on the 11th July 1932 at the Hindu College Hall under the chairmanship of DR. I. T. MITTRA, it was resolved, "That a local branch of the Indian Medical Association be organised in Delhi which shall be called the Delhi Branch of the Indian Medical Association."

CAPT. G. N. KHANNA, M.B., B.S., (ex- I. M. S.) was appointed provisional Honorary Secretary of the Branch.

Medical Associations, Societies, etc.

Medical Societies, Associations, Unions etc. are invited to make use of this Section of the Journal. —EDITOR.

Calcutta Medical Club.

The Club celebrated the seventieth birthday of their President SIR NILRATAN SIRCAR in the Hall of the Indian Association on Wednesday, the 17th August, 1932 in the presence of a large and distinguished gathering including the eminent physicians of the city.

DR. B. C. ROY, Mayor of Calcutta, presented to SIR NILRATAN the following address on behalf of the Calcutta Medical Club:

"Born and bred in adversity, amidst humble village surroundings, you have by your own endeavours succeeded in securing an abiding place in the esteem of your countrymen; starting your career in the medical profession at its lowest rung, you have been leading the profession for nearly thirty years. Both as a man and a physician, you have captivated the imagination of an increasing number of admirers and of successive generations of followers. Gentle yet firm, courteous yet courageous, you have by your patience, tact and dignity won the admiration of all, high and low, great and small. Your erudition, your versatile knowledge of men and things, your character, your mature judgment have been recognised by the Government of the day and by the people whom you have served with unflinching devotion for nearly half a century.

"Your alert mind and indomitable spirit, in spite of growing years, are yet young and free. You have adapted yourself to the varied environments of this changing world, keeping steadfastly to your ideal of Service and Sacrifice."

Replying to the address, SIR NILRATAN said that words failed to express the feelings which had overwhelmed him on this occasion. The sweet words of the members of the Club had revived in him the memory of many an inexcusable failure and of a thousand duties left undone and of the opportunities missed in life.

Addressing the young members of the profession, SIR NILRATAN said that he had received inspiration and learnt many things from them.

Concluding, he said that 50 years of his life in the medical profession had taught him that nothing could be achieved without effective organisation. They must organise their profession in Bengal for the spread of medical science throughout the length and breadth of the province. The older he grew, the more hopeful he became of the future of the medical profession in India and that glorious future was awaiting the younger generation of the medical profession in India. Nothing in the world could be achieved without selfless organisation and India's future depended upon that selfless union and organisation. He hoped that the younger generation of the medical profession would be so many leaders of that great mission.

Current Medical Literature

Puerperal Fever—Autohaemo-Injections.

LITWAK.

Arch. f. Gyn., Vol. 146.

Basing on his experience with almost 2000 cases of puerperal and postabortal diseases in the years 1926 and 1927 the author makes bold to state that the autohaemo-therapy is superior to all others in the treatment of puerperal fever. The amount of blood given never exceeded 10 c.c. Patients coming under treatment at the very beginning of their ailment were given 100 c. c. intramuscularly but afterwards the quantity was diminished by 1 c. c. with every injection. In cases which were admitted several days after the beginning of the disease the first dose was 5 c.c. and these were gradually increased by 1 c.c. each time. The injections when repeated every second day were found most beneficial. *S. S.*

Treatment of Burns.

STRAUSS.

Ohio State Medical Journal, February 1932.

The experience of clinicians seems to be that a second degree burn, one in which vesicles are formed usually proves fatal if two-thirds of the body are affected. Cases of burn of the third degree *i. e.* those where there is destruction of the epidermis and part of the dermis extending over one-third of the body end fatally.

DR. STRAUSS believes that the first consideration is the treatment of shock. He advocates pushing fluids to 4000-6000 cc. in 24 hours for adults and for children in proportion. If the patient survives the first day, his temperature will rise indicating that the toxin is being absorbed. Urine diminishes, and it may or may not contain albumin and casts. Blood chemistry usually shows retention of nitrogen. The author thinks that the exsanguination transfusion of ROBERTSON and BOYD may dilute a circulating toxin or destroy or bind it. The only suggested means to bleed a child is to pass the needle or cannula through the saphenous into the femoral at the fossa ovalis. This failing, the jugular is considered the next best site, the cubital vein being not sufficient. Dilution of some of the toxin may be accomplished by continuous venoclysis of 5 % glucose. The best dressing is fresh sterile 5 % tannic acid sprayed on from an atomizer until there is a layer of precipitate formed. Children with burns are placed on sterile sheets under a tent or cradle warmed with electric lights. The precipitate is not removed until it peels off by itself. If infection has occurred, the precipitate is removed after applying compresses of warm potassium permanganate or Dakin's solution.

Contraction is less with early skin grafting. An attempt should be made to fix the limbs in such a position as to prevent contraction and adhesions insofar as possible. Grafts are used after the crusts have been removed. Large Thiersch grafts are preferable if the area to be covered is not too large but otherwise either Reverdin grafts or pinhead size Thiersch grafts serve the purpose well. *S. K. S.*

Gonorrhoea—Iodine in Homeopathic Doses.

SAMBERGER.

Dermatoligisch Wochenschrift, No. 10, 1932.

The author tried to apply the method of homeopathic iodine treatment adopted by BIER for cases of common colds and other catarrhalic diseases, to treat cases of gonorrhoea that came under him. He reports of astounding results in cases of gonorrheal arthritis and epididymitis. He prescribes: Iodi puri 0·1, Pot. Iodati 1·0, Aqua dest. 10·0. S. Two drops in water to be taken once daily after lunch. Fever, swelling, and particularly the tormenting pains in the joints or in the epididymis disappear in about three to eight days. The second portion of urine also becomes clear again. Internal iodine administration alone was not enough to bring about the cure of gonorrhoea anterior cases. Investigations of the effect of treatment in cases of female gonorrheo speciaally that of the uterus and the adnexa are being carried on by the author at the present moment. *S. S.*

Calcification of Intra-renal Arteries Giving Roentgen Appearance of Calculi.

FISH AND HALLOCK.

Jour. A. M. A, June, 1932.

GEORGE WINTHROP FISH and LEONARD A. HALLOCK report a case of calcification of the walls of the large intra-renal branches of the renal arteries in such a way that it gave the roentgenologic appearance of calculi or tuberculous calcification. So far as the authors have been able to find out, no such cases are reported which bear similarity to the one they observed although calcification of this type has occasionally been noted at the post-mortem table. This case is of peculiar diagnostic interest to the roentgenologist internist, surgeon and urologist alike, as shadows such as these, though less numerous, are perhaps not infrequently seen and, when associated with pyuria, hematuria or pain, offer difficulties in diagnosis between calculus disease of the kidney and tuberculosis. *S. K. S.*

Post Operative Changes in the Libido Following Sterilizaton.

POPEROE.

(Amer. Jour. of Obstetrics and Gynaecology. Vol. XIX, January to June, 1930).

1. Of American married women at the present time 1 in 4 will probably report that she finds coitus either indifferent or repugnant.
2. Failure to note this fact has been responsible for misinterpretation of findings after sterilization.
3. Bilateral salpingectomy appears to produce of itself no effect whatsoever on the patients' sexual life.
4. Psychologic effect of sterilization where pregnancy was previously feared and the correction of the pathologic conditions lead about one third of the sterilised patients to report that their sexual life is improved after operation.
5. Salpingectomy accompanied by hysterectomy does not appear to produce any greater effect on the subjective sexual life than does simple salpingectomy.
6. Removal of ovaries produces more frequent changes in the libido yet even this in healthy and vigorous women often results in no alteration of sexual desire or response. *R. G.*

Rectal Digitalis Therapy.

ZWILICHOWSKAJA.

Zeit. fur Klin Med. June 22, 1931.

Consequent on her own investigations and study of reports on the subject ZWILICHOWSKAJA reaches the following conclusions : (*a*) The oral administration of digitalis causes a marked increase in the gastric secretion. (*b*) This increase in the gastric secretion inhibits the action of digitalis, for it was found that small quantities of gastric juice that were added to digitalis checked the contractility of the isolated frog heart. (*c*) The degree of inhibition of the contractility of the isolated frog heart is in direct proportion to the quantity of gastric juice that has been added to the digitalis and also to the length of time during which the gastric juice acted on the digitalis. It has been observed that in many cases stasis exists in the portal system and in them the lower portions of the intestine are of greater significance. The advisability of digitalis therapy depends on the following factors :—presence of gastric disorders such as hyperacidity, gastric and duodenal ulcers, dyspepsia that results from the administration of digitatis by mouth and circulatory disturbances in the portal system. *S. S.*

Whooping Cough.

McGEE.

South Medical Journal.

The results of rectal use of ether in 151 cases of Whooping cough in the hands of W. A. McGEE of Richmond showed better effect with patients over one year than among the younger ones which number 104.

Administered in olive oil equal parts, the ether was given daily and often twice during 24 hours. The usual dosage administered was one dram of the mixture. Infants under one year obtained two drams of a 25 per cent mixture which was injected once or twice daily. Extra drams were given in more severe cases. There was no untoward effect in any of the cases The repetition of administration depended on the response of the patient but as a rule was continued for 5-12 days. The tables of comparative results with ether and other methods, show that the patients treated with ether practically got well on an average of 10·5 days ; those treated by ephedrine in 24·5 days ; those treated with vaccine in 28 days ; with ether and ephedrine in 11·8 days ; with ether and vaccine in 12·5 days ; and with other combinations in from 12·5 to 39 days. The comparative analysis shows that rectal ether tharapy should constitute the treatment of choice for this malady. *S. S.*

Treatment of Puerperal Sepsis.

FAUVET.

Zenbralblatt fur Gynak, May 9, 1931.

FAUVET evaluates the following chief therapeutic methods in the treatment of puerperal pepsis : (1) the use of metals or of dyestuffs ; (2) shock therapy ; (3) the administration of antitoxins, of immune serums and of convalescent serum ; (4) surgical therapy, and (5) the administration of concentrated foodstuffs. The latter methods are discussed in extenso. The oral administration of foodstuffs has no effect and rectal application is contraindicated. Intravenous infusion of a solution of dextrose however, shows good results. Whenever the symptomatology indicates a severe infection the cubital vein is opened, a glass cannula is introduced and infusion of a 4 per cent solution of dextrose is continued for twenty four hours. About 1,500 c.c. is administered during this time. The concentration should in no case exceed 8 per cent. The favourable influene of this procedure depends on the fact that the excessive loss of water is counteracted by the administration of fluid and the nutritional therapy in the form of dextrose which as readily assimilable food, improves the patient's general condition. The only draw back of this method is that occasionally the circulation is impeded when it is necessary to discontinue it. But the periphlebitis or paraphlebitis, which generally develops, never brings about serious complications. In some cases the infusion is continued for several days together. Careful observation of the patient is essential for the success of the treatment. The author considers the intravenous continuous drop infusion as the foundation of treatment in puerperal sepsis and the earlier it is employed the better are the chances. The great advantage of infusion treatment is that it does not exclude the other method of treatment. Serotherapy should precede it, and a surgical intervention should not be made unless an infusion treatment has been given a trial. The mortality rate is said to be reduced by half as a result of infusion therapy. *S. S.*

Cirrhosis of Liver and Thyro-Ovarian Insufficiency.

LAIGNEL-LAVASTINE.

Bull. et. Mem. de la Soc. Med. des Hopitaux de Paris

Seven cases of cirrhosis of the liver associated with phenomena of thyro-ovarian insufficiency, are reported by LAIGNEL-LAVASTINE and his collaborators. They stress the parallel evolution of the cirrhotic and endocrine symptoms. Changes occur in the skin appendages with gradual loss of hair and eyebrows, myxedematous aspect, mammary atrophy and ovarian insufficiency leading to sterility developed simultaneously with the evolution of the cirrhosis of the liver. Whether the endocrine therapy in hormone deficiency acts favourably on the progress of the cirrhosis of the liver has yet to be investigated. It has been demonstrated that thyroid treatment gives good results in other syndromes with the same humoral disorders and consequently this mode of treatment seems rational. *S. S.*

Interrelationship of Pituitary to Endocrine System.

FRASIER.

Surgery, Gynecology and Obstetrics, (June) 1931.

FRASIER was impressed with the marked variations in the clinical expressions of the morbid pituitary gland while reviewing notes of 334 cases of pituitary lesions in man. He is of opinion that this gland presents far more problems than any other for study and observation. The wide variation in the clinical syndrome is obviously due to the many ways in which the hormones of the pituitary body influence the function of other glands and vice versa. The thyroid bears most intimate and most constant relationship with the pituitary and hypofunction of thyroid causes a consistent hypertrophy of the hypophysis in the male contrary to that in females. There is also some specific relation between the size and the activity of the pituitary and the thyroid. The anterior lobe is the specific agent that stimulates the thyroid. If the thyroid and suprarenals in the parents are partially extirpated the pituitary increases to two or three times its normal size in the offspring. Although the relationship between thyroid and pituitary has been proved to be definite and constant in lower forms of life, there is insufficient evidence regarding the involvement of the thyroid in men in various dysfunctions of the pituitary. Removal of the parathyroids does not show constant results as after thyroidectomy. The author maintains that the pituitary does not possess any specific growth relation with the parathyroid but he holds that clinical evidence points to its having some interrelation with the gonads. In the female one of the earliest symptoms of pituitary disorder, is amenorrhea. Impotence appears as a later symptom and is found associated with other long standing symptoms. The methods of treatment of pituitary disorders vary according to the indications ; glandular feeding for pituitary dysfunction, without pressure phenomena ; irradiation for primary pituitary lesions, particularly adenomas, with evidence of early pressure signs but without signs of advanced optic atrophy ; and, finally, operative intervention when vision is threatened or headache intolerable. The operative risk is 5 per cent. The degree of relief so far as vision is concerned depends on the presence and the degree of optic atrophy. If the operation is done without delay the field distortions can be completely abolished and vision wholly restored. If done in time operation along the transfrontal root is considered the best.

S. K .S.

NOTICE TO BRANCH MEMBERS.

MEMBERS of the various branches of the Indian Medical Association and of the Societies affiliated with it are requested to note that all communications about non-receipt of the Journal of The Indian Medical Association in due time should be addressed to the undersigned and not to their respective branches or Societies

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